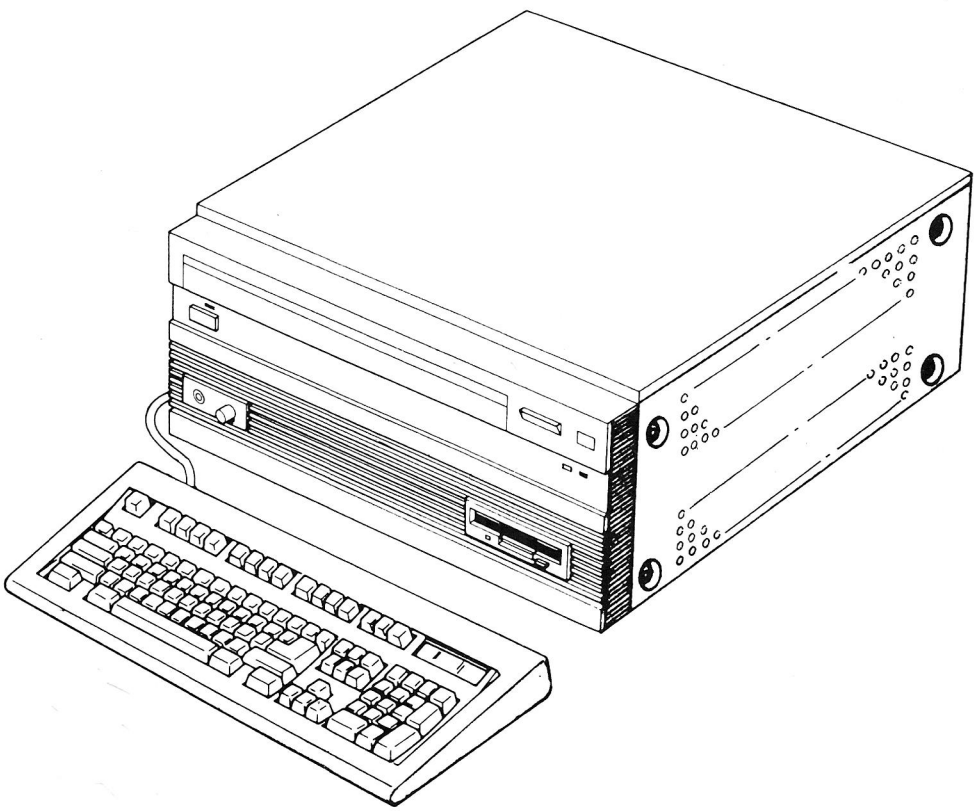
VIW-5600D

SERVICE MANUAL

Memory Expansion

SMI-5050



MICROFILM

Sony VIEW System

SONY®

TABLE OF CONTENTS

Section	Title	Page
1.	OPERATION	
1-1.	General	1-1
1-2.	Operation	1-2
1-3.	Technical Information	1-7
2.	SERVICE INFORMATION	
2-1.	Removal	2-1
2-1-1.	Cover Assembly	2-1
2-1-2.	Videodisc Player Part	2-1
2-1-3.	Shielding Sheet	2-2
2-1-4.	Front Panel Assembly of Videodisc Player Part	2-2
2-1-5.	Front Panel of Computer Part	2-2
2-1-6.	Micro Floppydisk Drive Part	2-2
2-1-7.	Hard Disc Drive Part	2-3
2-1-8.	Switching Regulator Part	2-3
2-1-9.	SP-21 Assembly	2-3
2-1-10.	Center Stay and SY-143 Assembly	2-3
2-1-11.	MB-232 Board and VS-42 Board	2-4
2-2.	Videodisc Player Part	2-4
2-3.	Micro Floppydisk Drive Part	2-4
2-4.	Installing Internal Option	2-5
2-5.	Changing Superimposer I/O Addresses	2-6
2-6.	Repair Parts	2-7
2-7.	Fixtures	2-7
3.	THEORY OF OPERATION	
4.	BLOCK DIAGRAM	
5.	COMPUTER SCHEMATIC DIAGRAM	
5-1.	Semiconductor Pin Assignments	5-1
5-2.	SY-143 Board	5-23
5-3.	MB-232 Board	5-47
5-4.	VS-42 Board	5-49
5-5.	SP-21 Board	5-57
5-6.	RAM-13 Board	5-58
5-7.	Switching Regulator	5-62
6.	SELF-DIAGNOSTICS	
7.	TROUBLESHOOTING	
8.	ADJUSTMENT	
9.	REPAIR PARTS AND FIXTURES	
9-1.	Mechanical Parts List	9-1
9-1-1.	Cover Block	9-1
9-1-2.	Computer Chassis Block	9-3
9-1-3.	Keyboard Block	9-5
9-1-4.	Micro Floppydisk Drive Block	9-7
9-1-5.	Hard Disc Drive Block	9-8
9-1-6.	Switching Regulator Block	9-9
9-2.	Electrical Parts List	9-11
	Switching Regulator	9-11
	MB-232 Board	9-13
	RAM-13 Board	9-13
	SP-21 Board	9-13
	VS-39 Board	9-13
	SY-143 Board	9-17
10.	EXPLANATION OF SMI-5050	
10-1.	Operation	10-1
10-1-1.	Features	10-1
10-1-2.	Installation	10-1
10-1-3.	Specifications	10-2
10-2.	Service Information	10-2
10-3.	Module Block Diagram	10-2

CHAPTER 1
OPERATION

1-1. GENERAL

What Is the Sony VIEW System

The Sony VIW-5600D VIEW (Visual Information Enhanced Workstation) system is a computer-controlled video information system. It consists of a computer and a videodisc player with graphics and superimposer boards installed in a single unit, and a separate keyboard (optional).
The Sony SMW-5001A VIEW/VGA Operating System Package is available for setting up and for the operating system of the VIW-5600D.

16-bit microprocessor as the center of the system
Because the computer employs the 10MHz 80286 CPU, high-speed data transfer and quick data processing are possible.

Storage devices
This system employs a 3.5-inch micro floppydisk(1.44M bytes with 2HD and 720 K bytes with 2DD disk when formatted) and a hard disk drive (40 M bytes) for storage of the operating system program and application software.

System expansion
The system provides 2 sockets on the mother board to install Memory Expansion SMI-5050. The system also provides 2 IBM PC/AT* compatible bus slots to accommodate various commercially available optional boards for system expansion.

Control of the videodisc player
The videodisc player is controlled by the computer. Control codes from the computer allow various operations such as playback at various speeds, repeat, pause, or search. The Sony SMW-5001A VIEW/VGA Operating System Package includes programs to control the videodisc player.

Software compatibility
Using the internal high scan superimposer board, the system supports all color display modes that are employed in IBM Personal System/2*'s graphics. You can use commercially available graphics software, courseware or authoring system for the IBM PS/2 on this VIEW system.

High quality superimposed picture
Because the digital scan converter doubles the horizontal frequency, the high quality flickerless graphics display is obtained in all color display modes. The VIEW system features an expanded color display mode (640 x 480 dots, 256 colors) for more precise graphics display.
The internal superimposer board also allows the VGA color graphics or characters generated by the computer to be digitally-superimposed over video images reproduced by the videodisc player.

Line out and headphones jacks
For monitoring the audio when a display without speakers is connected, the system is equipped with line out and headphones jacks.

PAL/NTSC compatibility
Either PAL or NTSC disc can be played. The computer graphic image can be superimposed onto the video image of either system.

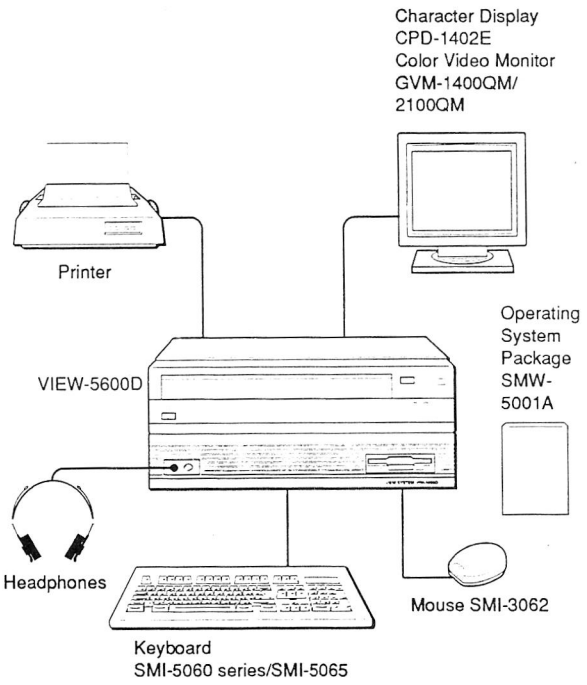
Fade In/out capability
Fade in/out operation is possible for both computer graphic and video images.

* IBM is a registered trademark of International Business Machine Corporation.
IBM PC/AT and Personal System/2 are trademarks of IBM.

What You Need – System Configuration

The typical configuration for the VIEW system is as shown below.
For the operating system, you need the Sony SMW-5001A VIEW/VGA Operating System Package.

Optional Devices and Software



What You Can Use – System Expansion

The following optional peripheral devices are available for expanding the VIEW system.

Internal Options

Warning
To prevent shock or energy hazard, do not attempt to install these internal options yourself. Request your Sony dealer to install them.

Dual RS-232C Board SMI-3031
Provides two additional RS-232C ports, which operate in the asynchronous mode.

Memory Expansion SMI-5050
Provides an Expanded Memory (EMS) or Extended Memory whose capacity is 2 M bytes.

Light Pen Interface SMI-3086
Provides interface between the SMI-5061 Light Pen and the VIEW-5600D, allowing touch panel emulation.

External Options

Keyboard **SMI-5060B (for UK English)**
SMI-5060F (for French)
SMI-5060D (for German)
SMI-5060E (for Spanish)
SMI-5060I (for Italian)
SMI-5065 (for Scandinavian--Swedish, Dutch and Norwegian)

Mouse SMI-3062
For quick and easy control of the cursor.

Trinitron color video monitor GVM-1400QM/2100 QM
Trinitron character display CPD-1402E
For display of information from the computer and the videodisc player.

Printer for IBM PCs
For program listing and printing out of processing results.

Light Pen SMI-5061
A Light Pen to be connected to the SMI-3086 Light Pen Interface. This is used to point a specific position on the display screen.

Cables

RS-232C cable SMF-3031
For connection between the Dual RS-232C board and various devices (to Modem).

Null Modem cable SMF-3036C
For connection between the RS-232C port and various devices (to Terminal).

Monitor cable SMF-5001 (for Sony GVM series monitors)
For connection between the VIEW system and the Sony GVM series monitors.

Monitor cable SMF-5002
For connection between the VIEW system and the Sony CPD series monitors.

Printer cable SMF-2120
For connection between the VIEW system and the printer.

1-2. OPERATION

Precautions

On Safety

- The mains switch is located on the rear panel.
- The unit operates on 220 or 240V AC, 50/60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not going to be used for an extended period of time.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.

On Installation

- The unit consists of high-precision electronic parts. Do not drop it or bump it against other objects. Do not place it in a location subject to vibration or on an unstable base.
- Do not install the unit near a heat source such as a radiator or air duct, or in a place subject to direct sunlight, excessive dust, and/or moisture.
- Do not place the unit near electronic equipment as it may malfunction if affected by an electromagnetic field. The internal floppydisk and hard disk unit is especially sensitive because it uses weak magnetic signals; never place electronic equipment, such as a TV set, near it.
- Provide adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets) or near materials (curtains, draperies) that may block the ventilation slots.
- Use only the specified peripheral equipment; otherwise, trouble may result. Before connecting peripheral equipment, be sure to turn the power off or the internal IC chip may be damaged.

On Moisture Condensation

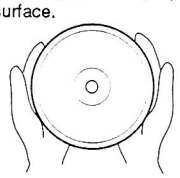
Do not operate the unit immediately after transporting it from a cold location to a warm location or in a room where the temperature rises suddenly, because moisture may condense in the operating sections of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the disc may be damaged. Therefore, remove the disc immediately when there is a possibility of moisture condensation and no picture is obtained. To evaporate the moisture rapidly, leave the player turned on without a disc loaded.

On cleaning

Clean the cabinet and keyboard with a soft, dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which might damage the finish.

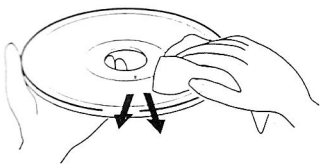
On handling videodiscs

- Handle the disc by its edge, and to keep the disc clean, do not touch the rainbow colored surface.



- Do not stick paper or tape on the disc surface.

- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a parked car in direct sunlight where a considerable rise in the temperature may occur.
- Before playing, clean the disc with the cleaning cloth. Wipe the disc from the center outwards.

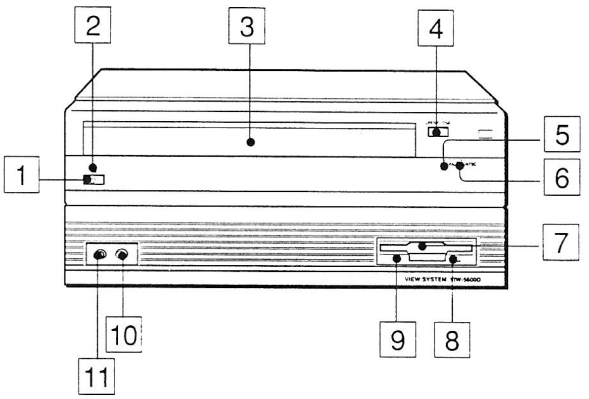


- Do not use solvents (such as benzine or thinner) or commercially available cleaners or anti-static sprays intended for analog record discs.
- After playing, remove the disc and store it in its case.

If any trouble occurs, unplug the unit, and contact an authorized Sony representative.

Location and Function of Parts and Controls

Front Panel



1 **Power switch**
Press this switch to turn on the unit. To stand by, press the switch again. This switch is active only when the MAIN POWER switch on the rear panel is on.
NOTE: Do not turn the switch on and off at intervals of less than 5 seconds.

2 **Power ON indicator**
While the power of the unit is on, this indicator lights up.

3 **Videodisc compartment**

4 **OPEN/CLOSE button**
Press to open the videodisc compartment, and press again to close it. The compartment will also close automatically when it is pushed lightly. Be sure to push the center of the compartment for proper operation of the player.

5 **PAL indicator**
Lights up when a PAL/SECAM videodisc is being played back.

6 **NTSC indicator**
Lights up when an NTSC videodisc is being played back.
PAL and NTSC indicators blink simultaneously while loading or unloading a videodisc.

7 **Micro floppydisk drive**
Built-in drive for a 3.5-inch micro floppydisk.

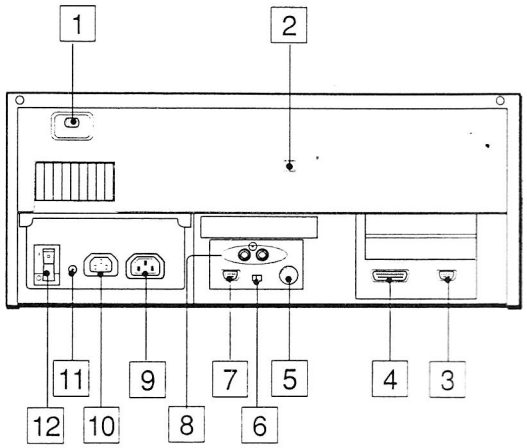
8 **Eject button**
Press this button to remove a floppydisk.

9 **In-use indicator**
When a micro floppydisk drive reads or writes data, this indicator lights up. Do not press the eject button while this indicator is lit.

10 **VOLUME control**
Controls the volume of the computer and videodisc sound from the built-in speaker and from the HEADPHONES jack.

11 **HEADPHONES jack (mini jack)**
Connect a headphone to this jack. The computer sound and the videodisc sound are mixed and output from this jack. The output sound is monaural.

Rear Panel

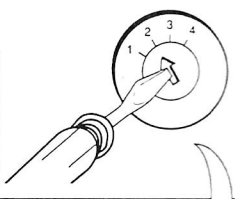


1 **Voltage selector**
Set this selector to the 220V or 240V position according to the power supplied from the wall outlet.

2 **BAUD RATE selector**
Select the data transmission speed on the RS-232C line of the videodisc player part. The baud rate can be set to 9600, 4800, 2400, or 1200 baud. The initial setting at the factory is 9600.

Switch setting

1	1200
2	2400
3	4800
4	9600



Set the arrow to point to the desired number using a tiny screw driver.

Make sure that the baud rate of the computer part (COM2) is set to the same value as that of the videodisc player by software. Refer to the SMW-5001A VIEW/VGA Operating Sytem Package's manual.

3 **RS-232C connector** (9-pin D-SUB)
An asynchronous communication connector. Connect devices such as the SMI-3062 mouse or a modem. This port is accessed as "COM1".

4 **PRINTER connector** (25-pin D-SUB)
Connect to a printer of the standard 8-bit parallel data transfer type (Centronics) for IBM PC.

5 **KEYBOARD jack** (5-pin DIN)
Connect the keyboard (not supplied) to this connector.

6 **HUE selection switch**
Set this switch according to the monitor connected to the system. This switch adjusts the hue of the computer and videodisc pictures displayed on the monitor screen. (Default: right)

7 **MONITOR connector** (analog RGB)
Connect a multiscan monitor such as Sony CPD-1402E/GVM-1400QM/2100QM.

8 **LINE OUT jacks** (phone)
Connect active speakers (speakers with amplifier) to these jacks. The computer sound (monaural) and the videodisc sound (stereo) are output from these jacks.

9 **AC OUT** (outlet) **connector**
Connect equipment whose power consumption is no more than 2 A. Power is supplied to the connected equipment only when the MAIN POWER switch on the rear panel and the power switch on the front panel of this unit are turned on.

10 **AC IN** (inlet) **connector**
The supplied AC power cord, whose other end is connected to a wall outlet, is connected here.

11 **Ground terminal**
To reduce hum, ground the unit by connecting a ground wire to this terminal.

12 **MAIN POWER switch**
The main switch to turn on and off the unit. When the unit is not going to be used for a long period of time, turn off this switch.

Installation and Starting of the System

Flow

The following is the flow for installing and starting the Checking the Contents of the VIW-5600D Package.

Check the contents of the VIW-5600D package.
See page 1-5.

↓

Install internal options.
Refer to your Sony dealer for installation.

↓

Install the system in a rack, if necessary.
For the note on installing the VIEW system in a rack, see page 1-5.

↓

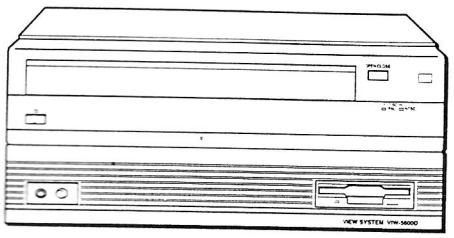
Connect external options.
See page 1-5.

↓

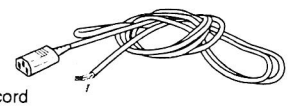
Start the VIEW system.
See SMW-5001A VIEW/VGA Operating System Package's manual.
For the keyboard operation, see page 1-6.
For using the videodisc player, see page 1-7.

Checking the contents of the VIW-5600D Package

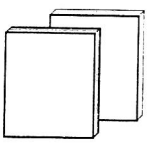
Check that the following are included in your VIW-5600D package.



Main unit



AC power cord
(The appropriate AC plug will be supplied by the dealer.)

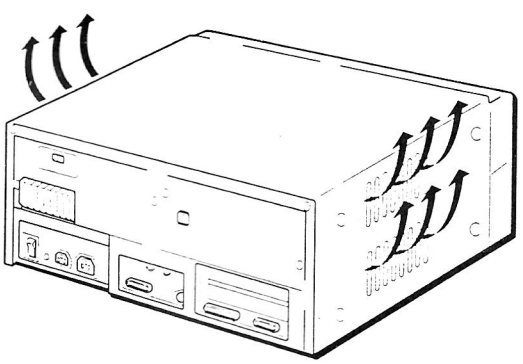


Operating instructions
Installation manual

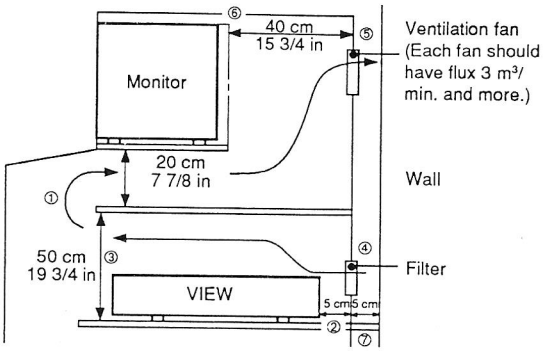
Notes on Installing the VIEW System in a Rack

When the VIEW system is installed in a rack, special care should be taken to prevent internal heat buildup.

Ventilation holes on the unit



Recommended ventilation when installed in a closed rack



① The air in the rack should be circulated from the bottom to the top as indicated above.
The temperature in the rack should not exceed 35°C (95°F).

② Allow at least 5 cm (2 inches) between the rack and the unit on both sides and at the back.

③ The distance between each shelf should be at least 50 cm (19 3/4 inches).

④ The holes located at the back of the rack should have filters to prevent dust from being drawn into the rack.

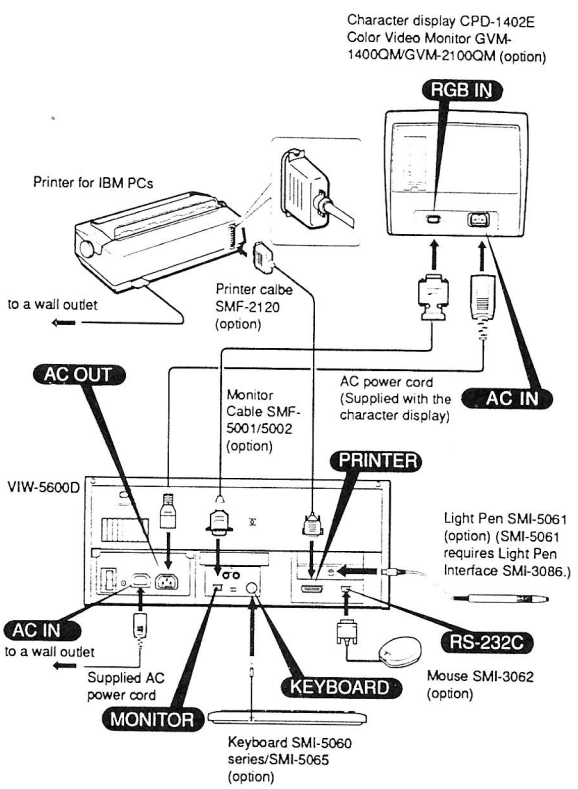
⑤ At least two ventilation fans should be used and should be installed in the back of the rack as indicated in the illustration.

⑥ If a monitor is installed in the same rack, care should be taken so that the heat from the monitor does not affect the VIEW system.

⑦ Allow at least 5 cm (2 inches) behind the rack when installing it against the wall.

Connecting External Options

- Before connection, make sure that the power of the system is turned off.
- To ensure connection, insert the connectors firmly.



Tips on Videodiscs

Types of videodiscs

CAV(constant angular velocity) disc
The CAV disc always rotates at a constant speed of 1800 r.p.m. and the laser beam moves from the inner part of the disc to the outer. Up to 30 minutes of playback (54000 frames) is possible on one side of the disc. Each frame of the playback picture is recorded on one track and is reproduced in one rotation. The frame number is recorded on the track. Flexible playback operations such as variable speed playback and repeat play are possible using the frame numbers as reference.

CLV(constant linear velocity) disc
With the CLV disc, the rotational speed varies from 600 r.p.m. to 1800 r.p.m. so that a constant linear velocity is maintained. The laser beam moves from the inner part of the disc to the outer as with CAV discs. Playback of up to one hour is possible on one side of the disc, although only normal play, scan and search operations are possible. The elapsed playback time or the chapter number being played can be displayed on the monitor screen. It is possible to search the beginning of a chapter or the specified time code.

Comparison of Sony videodisc code types

	Type	Purpose	Location on disc	Capacity	Customer's creation method	Encoding method
I. CAV discs	Vertical blanking (partial listing) – frame number*1) (picture numbers)	frame access	all vertical blankings	00001 to 54000	not available	added automatically during mastering
	– picture stop*2)	automatic stop on a frame, during "play" and "slow" modes	desig-nated vertical intervals	up to 54000	list of time codes on a master tape to have stops	added during mastering
	– chapter number*3)	divide content into chapters	desig-nated vertical blankings	00 to 79: min. chapter = 30 tracks	list of first/last time codes on a master tape of all chapters	added during mastering
II. CLV discs	Vertical blanking – time code number	time code access	all vertical blankings	00 hr 00 mins 00 sec to 01 hr mins	not available	added automatically during mastering
	– chapter number	divide content into chapters	desig-nated vertical blankings	00 to 79; min. chapter = 30	list of first/last time codes on a master tape of all chapters	added during mastering
III. CAV/CLV discs	Vertical blanking – Lead-in *4)	locate the beginning of the program on a disc	desig-nated vertical blankings	—	not available	added during mastering
	– Lead-out *4)	locate the end of the program on a disc	desig-nated vertical blankings	—	not available	added during mastering

*1) Frames
The CAV discs have up to 54,000 "frames" which are numbered in sequence. One frame is recorded on one track, that is, a frame is played back with one rotation of the disc. You can search for a particular frame quickly or repeat a particular sequence of frames.

*2) Picture stop
When the player detects this code, the playback enters the still mode. This code may be ignored in the scan and search modes.

*3) Chapters
There are CAV and CLV discs on which "chapters," like the chapters of a book, are pre-recorded. If a chapter number is displayed after a frame number has been displayed (on a CAV disc) or after playback time is displayed in minutes (on a CLV disc) when you change the display mode, the data are pre-recorded in chapters.
You can easily search for a particular chapter and play it back repeatedly.

*4) Lead-in/Lead-out
When the player detects the lead-out code, it returns to the beginning of a disc, detects the lead-in code and repeats playback or stops at the beginning of the program area according to the AUTO REPEAT switch setting.
When the player detects the lead-in or lead-out code in SCAN mode, the same result will be obtained.

Troubleshooting of a Videodisc Player

Many apparent malfunctions may be caused by a misoperation or an oversight. If any difficulty arises in operation, check through this list of symptoms and causes. Should the difficulty persist, unplug the unit and contact your authorized Sony service facility.

Symptom	Cause
The disc compartment is ejected automatically.	• The videodisc is not placed correctly on the tray. • The videodisc is scratched or has dirt on its surface. • The disc is upside down. The side to be played back should be placed facing down.
The disc compartment does not come out.	• Power is not turned on.
Picture is not displayed and DISC indicator lights up.	• The monitor is not turned on. • The connection of the monitor is not correct. • The disc is upside down. The side to be played back should be facing down.
Picture is not displayed and DISC indicator blinks.	• The videodisc is not placed correctly on the tray.
Poor picture quality	• Connection of the monitor is not correct. • Equipment near the player is transmiting noise and affecting the picture quality of the videodisc. • The disc to be played back has a scratch or dirt on the surface. • There is moisture condensation in the videodisc player.
No audio	• The speaker system is not connected correctly. • The volume setting of the amplifier is too low. • Audio is muted in all modes other than normal playback.
Playback of a certain section of the disc is not possible.	• The videodisc is scratched or has dirt on a section of it.
A certain section of the videodisc cannot be located by searching.	• The videodisc is scratched or has dirt on a section of it. Replace the defective disc with another one.
The picture is dimmed and the DISC indicator is lit.	• A search operation is taking place. If the specified number is invalid (not on the disc) or if a defective disc prevents the proper section from being found, the player remains in the search mode for about 20 seconds.
Fast forward or reverse playback is not possible.	• A CLV disc is being used.

Specifications

CPU

Processor used	Intel 80286
Clock frequency	8 MHz/10 MHz (selectable by the software)
Interrupt	External interrupts (software initiated) INT instructions Instruction exceptions
Resetting	Automatic at power on

Memory

RAM	640 K Bytes (resident)
Video RAM	512 K Bytes
ROM	128 K Bytes Initial program loader, Setup program Diagnostics program, and I/O driver
DMA	7-channel programmable DMA Channel 2: Floppydisk interface

CRT display

Screen configuration	Superimposition of VGA display over the video images
RGB video output	RGB analog signal, 0-0.7Vp-p, 75 ohms
Sync signal frequency	Horizontal: 31.25 (31.5) KHz Vertical: 50 (60) Hz for all superimposed VGA mode and mode11, 12 and 5F in normal VGA mode 70 Hz in normal VGA mode (except 11,12 and 5F)

* Figures in () are for NTSC.

I/O interface

RS-232C	9-pin connector, asynchronous Baud rate: Programmable up to 9600 baud (COM1)
RS-232C (Internal)	Asynchronous (TTL level): For controlling videodisc player part Baud rate: Programmable up to 9600 baud (COM2)
Printer	25-pin connector TTL level 8-bit parallel transfer
Floppydisk	3.5-inch micro floppydisk 2HD type: 1.44M bytes (formatted) 3.5-inch micro floppydisk 2DD type: 720K bytes (formatted)
Hard disk	3.5 inch, 40 M bytes (Access Time: 28mS)
Timer/Calendar	DS1287 with backup function (5 years)

Playback system

Disc format	Laser Vision
Pick-up method	Laser beam (reflective)
Laser	Diode laser (λ = 7800Å)
Emission duration	Continuous
Laser output	0.4 mW* max.
Videodisc	12" and 8"
Maximum playing time	CAV: 30 min/side CLV: 60 min/side
Spindle revolution	CAV: 1800 r.p.m. CLV: 1800 to 600 r.p.m.
Access time	CAV: 3 sec (by frame) 10 sec (by chapter) CLV: 10 sec
Control code	Compatible with the control codes for an Sony LDP-3600D Videodisc Player (Refer to the LDM-G1000 Interface Manual)

* This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.

Audio

Output	Line out: –1.5 dBs (1 kHz, 100% MOD, load impedance 47 kilohms) Load impedance 2 kilohms and more unbalanced
Signal-to-noise ratio	CX ON: 70 dBs and more CX OFF: 56 dBs and more
Frequency response	40 Hz to 20 KHz

General

Power requirement	220 or 240 V AC, 50/60 Hz
Current consumption	3.2 A max. (VIW-5600D: 1.2 A, OUTLET 2 A)
Operating temperature	5° C to 35° C (41° F to 95° F)
Operating humidity	25% to 80% (at 25° C/77° F)
Storage temperature	–20° C to +60° C (–4° F to 140° F)
Dimensions	Approx. 430 x 201 x 410 mm (w/h/d) (17 x 8 x 16 1/4 inches) excluding projecting parts and controls
Weight	Approx. 20 kg (44 lb 1 oz)

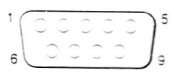
Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

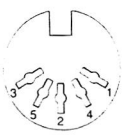
Pin Assignment of the Connectors

RS-232C connector



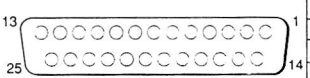
Pin No.	Signal
1	CD
2	–RxD
3	–TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

KEYBOARD jack



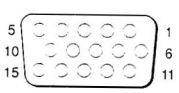
Pin No.	Signal
1	KBCLK
2	KBDATA
3	N.C.
4	GND
5	+5V

PRINTER connector



Pin No.	Signal
1	–STROBE
2–9	DATA0-7
10	–ACK
11	BUSY
12	P.E.
13	SLCT
14	–AUTO FD
15	–ERROR
16	–INIT
17	–SLCT IN
18–25	GND

MONITOR connector



Pin No.	Signal
1	RED VIDEO
2	GREEN VIDEO
3	BLUE VIDEO
4	N.C.
5	GND
6	RED RETURN (GND)
7	GREEN RETURN (GND)
8	BLUE RETUIRN (GND)
9	N.C.
10	GND
11	N.C.
12	N.C.
13	HORIZONTAL SYNC
14	VERTICAL SYNC
15	N.C.

Error or Information Messages

During or after the power-on process, an error or an informational message may be displayed on the screen. The messages and how to correct the error are as shown below.

Setup trouble messages

When one of the following messages is displayed, set the correct configuration information executing the "Set SETUP RAM" of the Installation Program included in SMW-5001A.

- Diskette configuration error
- Errors found disk X: Failed initialization
- Errors found incorrect configuration information memory size miscompare
- Hard disk configuration error
- Invalid configuration information – please run SETUP program
- Time-of-day clock stopped
- Time-of-day not set – please run SETUP program

Hardware trouble messages

When one of the following messages is displayed, turn off the unit and turn it on again. If the error message is displayed again, consult your Sony representative.

- Diskette drive reset failed
- Diskette drive 0 seek failure
- Display adapter failed; using alternate
- Gate A20 failure
- Hard disk failure
- Hard disk read failure – strike F1 to retry boot
- Keyboard clock line failure*
- Keyboard data line failure*
- Keyboard controller failure*
- Keyboard struck key failure*
- Memory address line failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory data line failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory high address line failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory double word logic failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory odd/even logic failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory parity failure at *hex-value*, read *hex-value*, expecting *hex-value*
- Memory write/read failure at *hex-value*, read *hex-value*, expecting *hex-value*
- No timer tick interrupt
- *Hex-value* optional ROM bad checksum=*hex-value*
- Shutdown failure
- Timer chip counter 2 failed
- Timer or interrupt controller bad
- Unexpected interrupt in protected mode

Other messages

The following are messages which are not explained above and methods of correcting the errors.

- Diskette drive 1 seek failure
  You can install only one floppydisk drive in the VIW-5600D. Check the item "Diskette B:" of the configuration information using the setup program in the system ROM. It should be set to "Not installed." If the setting is not correct, change it. If it is correct, turn off the unit and turn it on again. If the error message is displayed again, consult your Sony representative.
- Diskette read failure – strike F1 to retry boot
  Change the floppydisk to a bootable one and try starting the system again.
- Hard disk controller failure
  Check the item "Harddisk" of the configuration information using the SMW-5001A Installation program. If it is correct, turn off the unit and turn it on again. If the error message is displayed again, consult your Sony representative.
- No boot device available – strike F1 to retry boot
  Insert the system disk in the floppydisk drive A and press F1 key.
- No boot sector on hard disk – strike F1 to retry boot
  Format the drive C or make it bootable.
- Not a boot diskette – strike F1 to retry boot
  Replace the disk with the bootable one and retry boot.
- I/O card parity interrupt at *address*. Type (S)hut off NMI, (R)eboot, other keys to continue
- Memory parity interrupt at *address*. Type (S)hut off NMI, (R)eboot, other keys to continue
  Press the S key, and you will temporarily continue the operation. Then turn off the unit and turn it on again. If the error message is displayed again, consult your Sony representative.

Informational message

The following are the messages that provide information and require no action.

- *Hex-value* Base Memory
  Shows the size of the base memory that was tested successfully.
- *Hex-value* Extended Memory
  Shows the size of extended memory that was tested successfully.
- Decreasing available memory
  Displayed immediately after an error message, indicating that the memory chips failed. Refer to the solution for that error message.
- Memory tests terminated by keystroke
  Indicates that you have pressed the spacebar during the memory tests and have stopped the memory tests.
- Strike the F1 key to continue
  Indicates that an error was detected during the self-test diagnostics. Press the F1 key to attempt to boot.

* One of these messages may be displayed when you press a key on the keyboard during the system start-up procedure.

Setup Program in the System ROM

When you first start the system after purchase or after you change the hardware configuration, you must set up the system using the Installation Program included in the SMW-5001A VIW/VGA Operating System Package. However, when you want to change the configuration for the keyboard to "not installed," for example since it is not used for demonstration, or when you want to change the CPU clock frequency as the optional board requires, you must use the setup program in the system ROM. The procedure is described below.

1 Turn on the power of the system.

2 When the message "Strike the F1 key to continue, F2 to run the setup utility" appears on the screen, press the F2 key.
When the MS-DOS has started, press the Ctrl, Alt and Esc keys simultaneously.
The setup program will start.

3 Select the item to be set using the ↑ or ↓ key and then select the setting using the → or ← .

4 After you have changed the setting, press the Esc key.
The system will restart with the new setting.

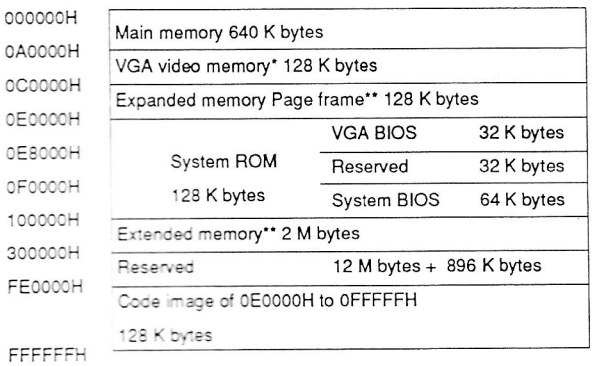
Notes:

- In step 3, the following items also appear and they can be changed. However, as they have already been set properly by using the SMW-5001A Installation Program, do not change their setting.

Diskette A:	3.5 inch, 1.44 M Bytes
Diskette B:	Not installed
Hard disk drive 1:	Type 17
Hard disk drive 2:	Not installed
Base memory size	640 K bytes
Extended memory size	Not Installed (when SMI-5050 is not installed)
Display	VGA/EGA
Coprocessor	Not Installed

- When an item is selected and you press the F1 key, the explanation for that item will be displayed on the screen.
- You can temporarily change the CPU clock frequency by pressing the Crtl + Alt + ↑ or ↓ .
- The setup program in the system ROM may not be started when the TSR (Terminate and Stay Resident) program which is started by pressing the Crtl, Alt or Esc is in the memory.

Memory Map



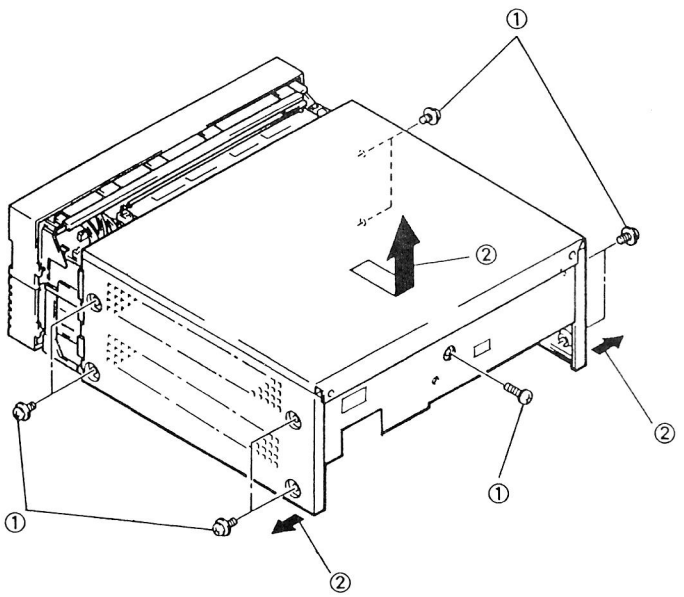
* You can access the 512 K-bytes (resident) memory area by banking in the 128 K-bytes VGA video memory.
** This area can be used when an SMI-5050 Memory Expansion is installed.

CHAPTER 2
SERVICE INFORMATION

2-1. REMOVAL

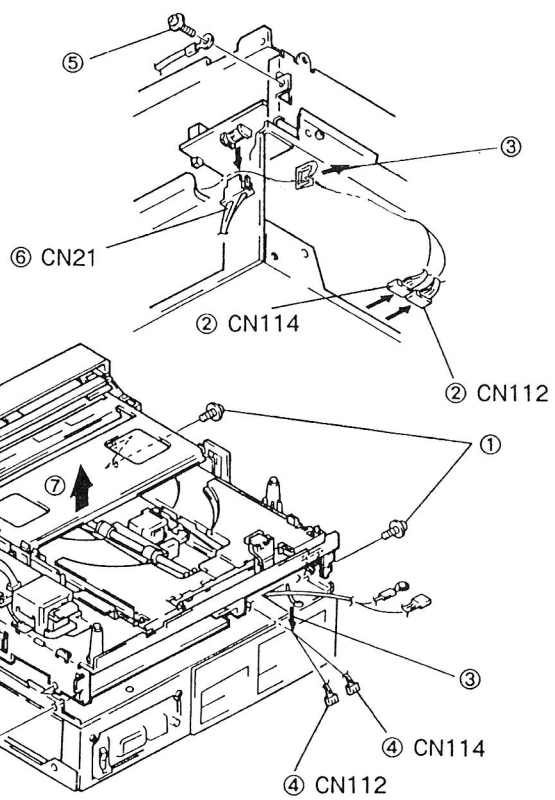
2-1-1. Cover Assembly

① Unscrew the nine screws.
② Gently lift the cover off the chassis holding its lower rear edges.



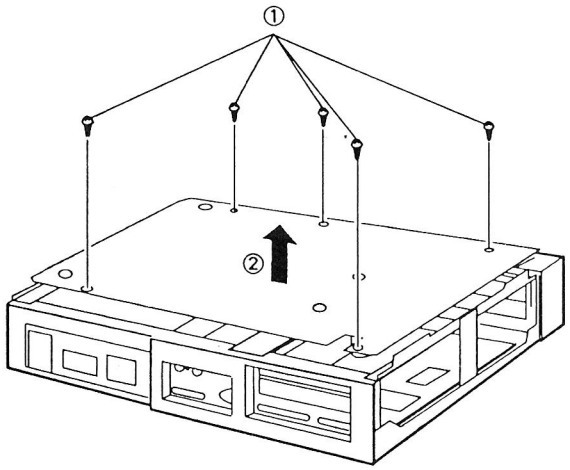
2-1-2. Videodisc Player Part

① Unscrew the four screws.
② Unplug the CN112 and CN114 connectors. Do not pull the cable.
③ Detach the data cables from the clamps.
④ Draw the data cables out of computer part side.
⑤ Remove the screw fastening the ground cable.
⑥ Unplug the CN21 (internal power cable) connector.
⑦ Remove the videodisc player part.



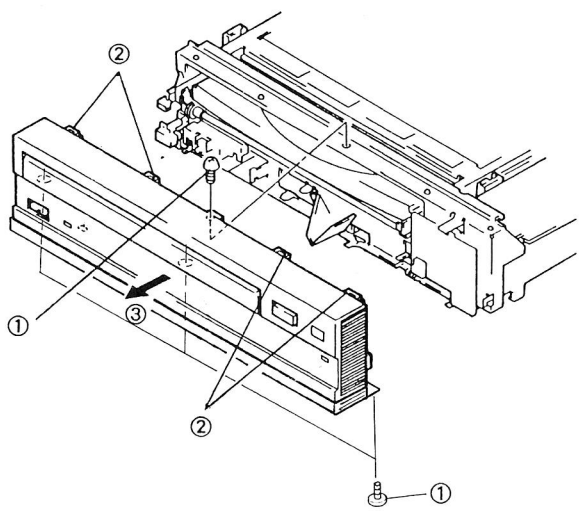
2-1-3. Shielding Sheet

① Unscrew the five screws.
② Remove the sheet.



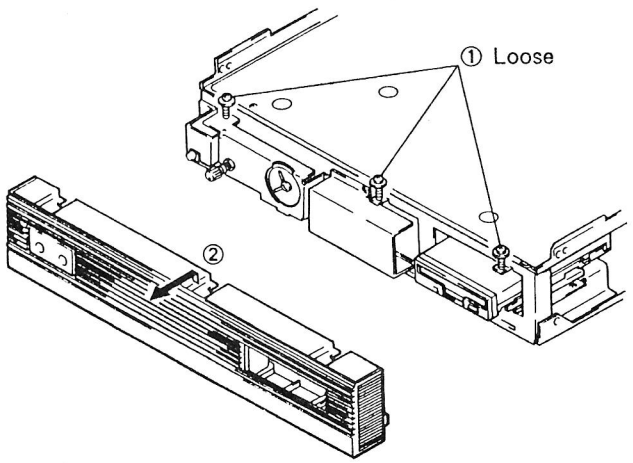
2-1-4. Front Panel Assembly of Videodisc Player Part

① Unscrew the four screws.
② Remove the four claws.
③ Remove the front panel assembly.



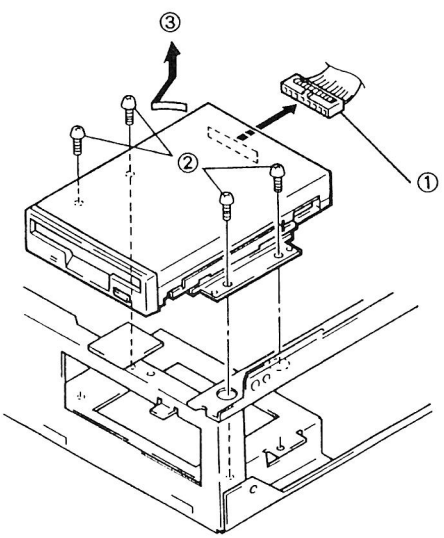
2-1-5. Front Panel of Computer Part

① Loose the three screws.
② Remove the front panel.



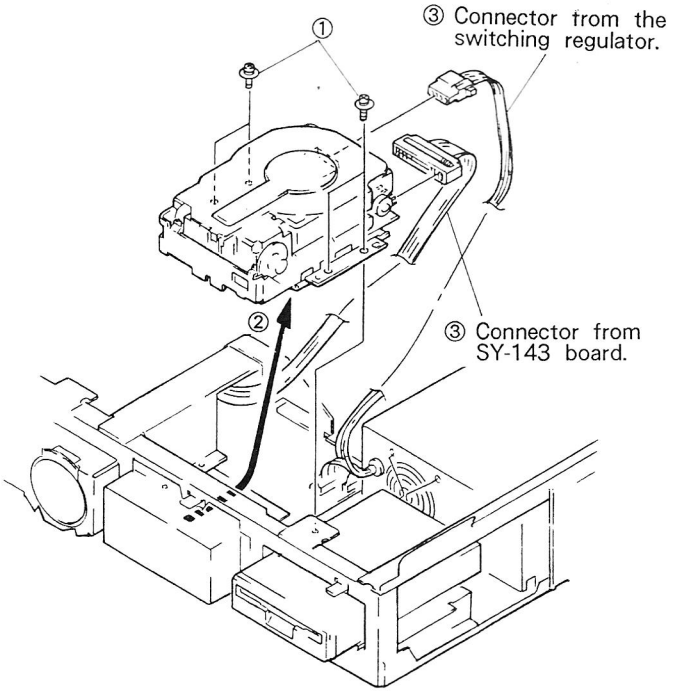
2-1-6. Micro Floppydisk Drive Part

① Unplug the connector. Do not pull the cable.
② Unscrew the four screws.
③ Gently lift the drive part off the chassis turning its posture.



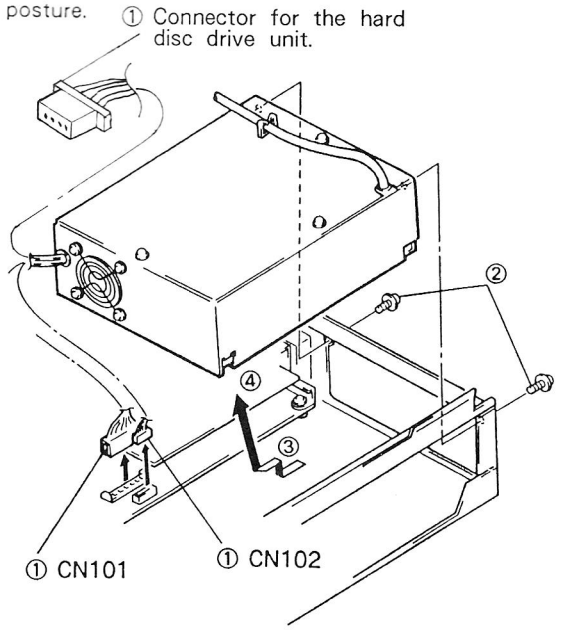
2-1-7. Hard disc Drive Part

① Unscrew the four screws.
② Gently lift up the drive part off the chassis.
③ Unplng the two connectors, from the switching regulator and from SY-143 board.



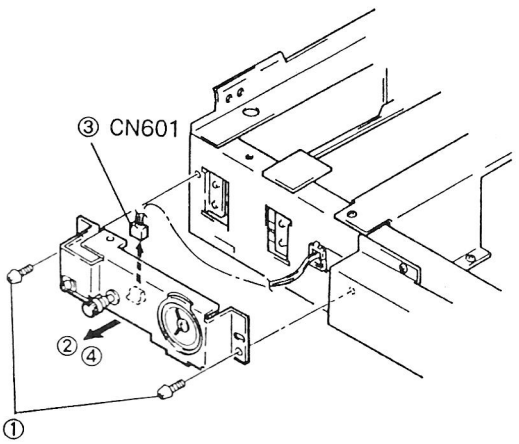
2-1-8. Switching Regulator Part

① Unplug the CN101, CN102, and for the hard disc drive unit connectors. Do not pull the cable.
② Unscrew the two screws.
③ Pull a little the regulator part.
④ Gently lift the regulator part off the chassis incline its posture.



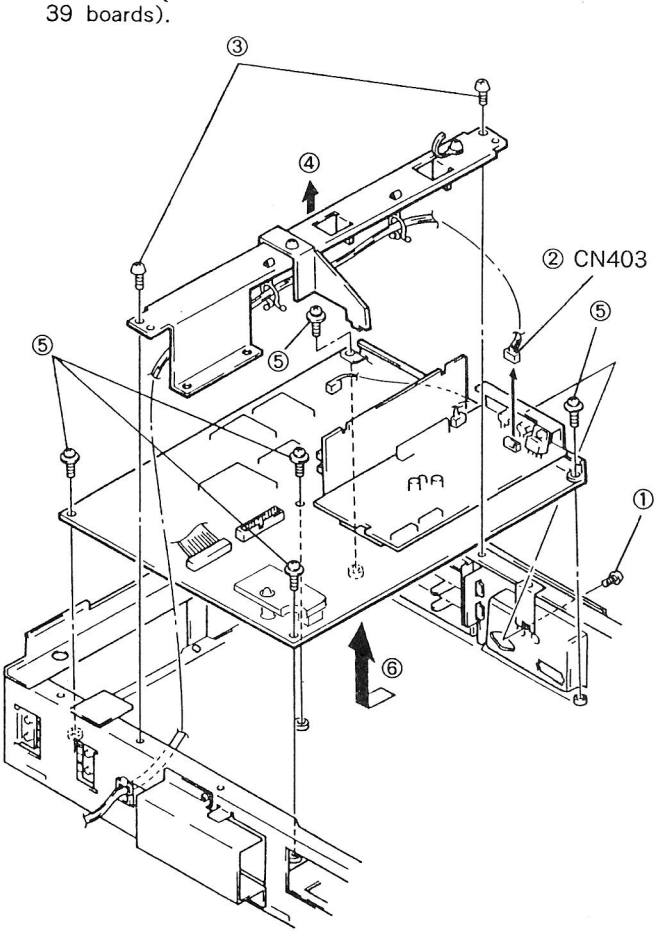
2-1-9. SP-21 Assembly

① Unscrew the two screws.
② Pull a little the SP-21 assembly.
③ Unplug the CN601 connector. Do not pull the cable.
④ Remove the SP-21 assembly.



2-1-10. Center Stay and SY-143 Assembly

① Unscrew the screw.
② Unplug the CN403 connector. Do not pull the cable.
③ Unscrew the two screws.
④ Remove the stay.
⑤ Unscrew the five screws.
⑥ Remove the SY-143 assembly (including MB-232 and VS-39 boards).

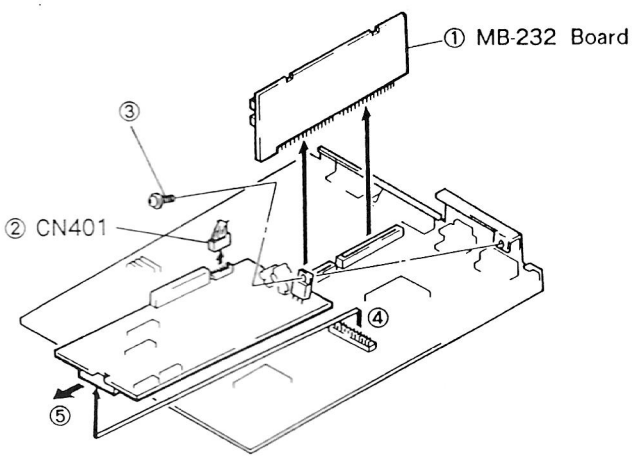


2-1-11. MB-232 Board and VS-42 Board

2-1-11-1. Remove they boards off the SY-143 assembly

Refer to right figure.

① Remove the MB-232 board.
② Unplug the CN401 connector. Do not pull the cable.
③ Unscrew the screw.
④ Unplug the CN115 connector.
⑤ Remove aslant the VS-42 board.



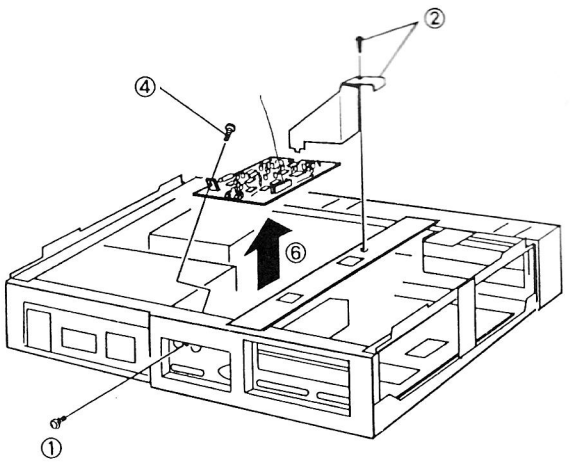
2-1-11-2. Each remove they boards off the chassis

VS-42 Board : Refer to right figure. See Section 2-1-10 for CN403, and Section 2-1-11-1 for CN401 and CN115.

① Unscrew the screw.
② Remove the screw fastening the retainer.
③ Unplug the CN401 and CN403 connectors. Do not pull the cable.
④ Unscrew the screw.
⑤ Unplug the CN115 connector.
⑥ Remove aslant the VS-42 board. See figure on Section 2-1-11-1.

MB-232 Board

① Remove the center stay. Refer to Nos. ② to ④ on Section 2-1-10.
② Remove the MB-232 board. See figure on Section 2-1-11-1.



2-2. VIDEODISC PLAYER PART

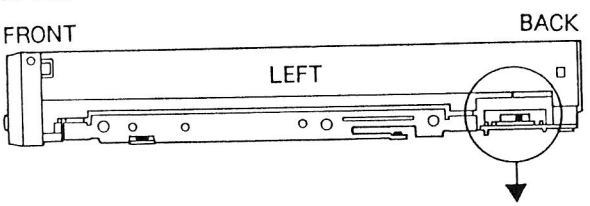
When servicing "Videodisc Player Part" of VIW-5600D, use the LDP-3600D service manual (9-972-783-XX) together with one.

Be careful the video disc player part of LDP-3600D is different from that of VIW-5600D a little.

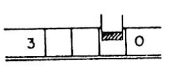
On this VIW-5600D service manual, computer sections are mainly described.

2-3. MICRO FLOPPYDISK DRIVE PART

When servicing "Micro Floppydisk Drive Part" of VIW-5600D, use the service manual (9-975-189-XX) of MP-F17W together with one.



When using the micro floppydisk drive incorporated in VIW-5600D, the setting switch is generally set to "1" position as shown at right.



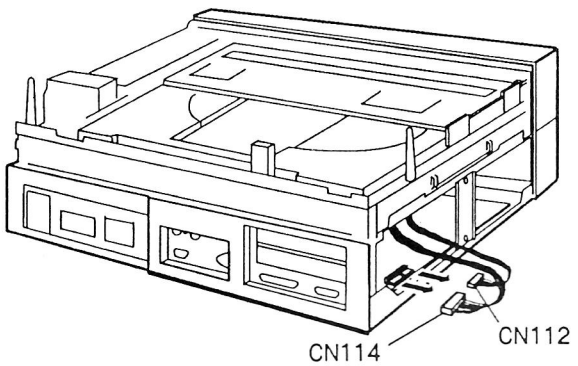
SETTING SWITCH

2-4. INSTALLING INTERNAL OPTION

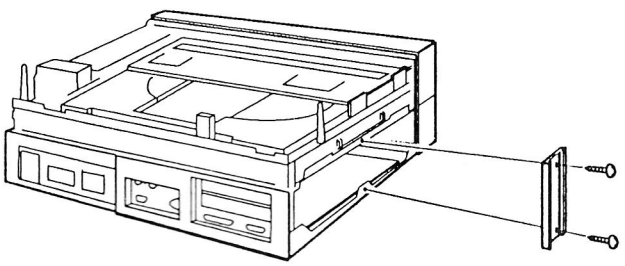
SMI-5050 : Refer to Chapter 10

For Bus Slots : As follows

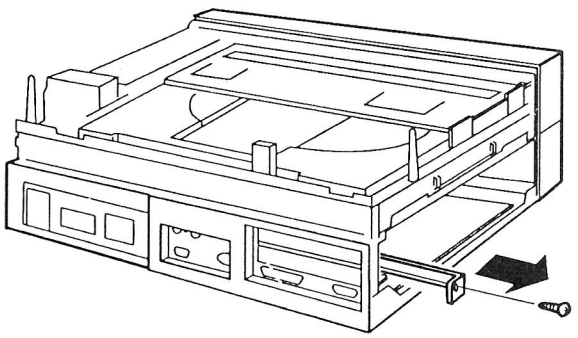
1. Remove the cover assembly. Refer to Section 2-1-1.
2. Unplug the CN112 and CN114 connectors. Do not pull the cable.



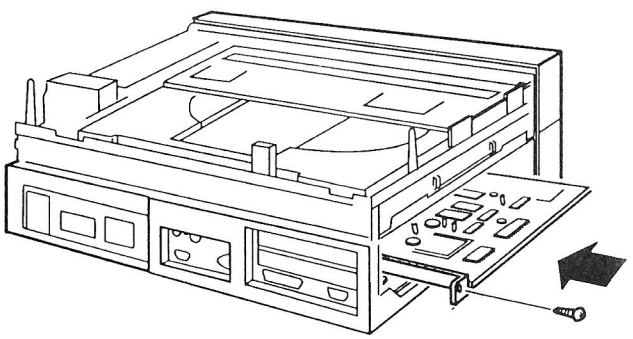
3. Remove the side plate.



4. Remove the plate from one of the slots.
   For each board installation, remove the plate from the lowest unoccupied expansion slot.



5. Insert the optional board while aligning it to the support brackets and push it forward until the edge connector properly enters the mating socket. Secure the optional board with the screw removed in step 4.



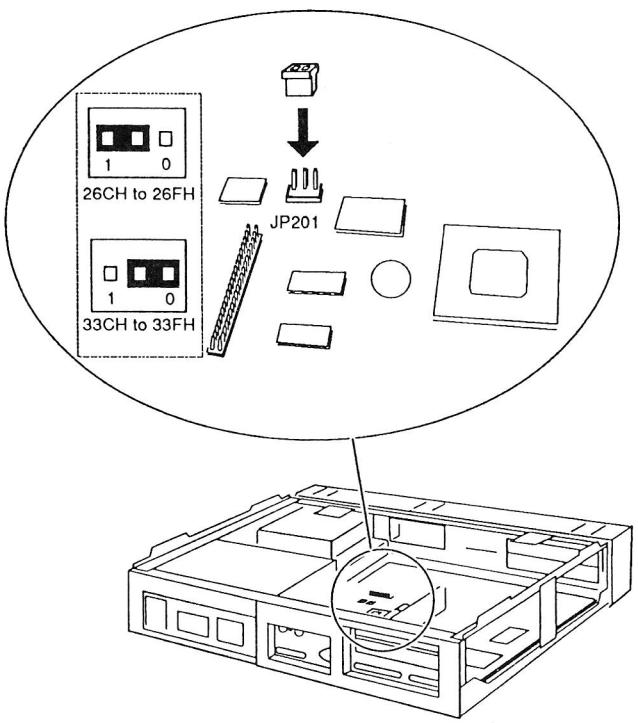
6. Attach the side plate removed step 2.
7. To change the superimposer I/O addresses, reset the jumper pins referring to the Section 2-5.
8. Plug in the CN112 and CN114 connectors.
9. Replace the cover assembly.

2-5. CHANGING SUPERIMPOSER I/O ADDRESSES

2-5-1. Remove the Parts

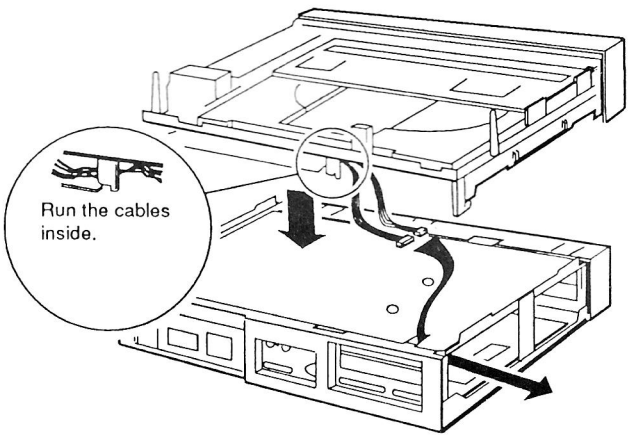
1. Remove the cover assembly.
   Refer to Section 2-1-1.
2. Remove the videodisc player part.
   Refer to Section 2-1-2.
3. Remove the shielding sheet.
   Refer to Section 2-1-3.
4. Remove the VS-42 board.
   Refer to Section 2-1-11-2.

2-5-2. Reset the Jumper Pins



2-5-3. Instruction the Parts

Follow the instructions provided in Section 2-5-1 in reverse order.
Be sure to the pass the data cables (Pull out in ④ of Section 2-1-2) inside the computer part.



Tips
When placing the videodisc player part in position, shift it slightly forward and then pull it backward on the computer part. This will make the operation easier.

Notes
- When reinstalling the VS-42 board, be sure to plug the VS-42 board's connector (CN401) into the mating connector (CN115) on the SY-143 board.
- Be sure to connect the internal cable before reinstalling the cover assembly.
- Be aware of internal wiring when placing the videodisc player part in position. Take a moment to check that no wires are squeezed under the unit.

2-6. REPAIR PARTS

1. Safety Related Components Warning.
   Components identified by shading marked with ⚠ on the schematic diagrams and repair parts list are critical to safe operation.
   Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

2. Replacement Parts supplied from Sony Parts Center will sometimes have a different shape from the original parts. This is due to "accommodating the improved parts and /or engineering changes" or "standardization of genuine parts".
   This manual's repair parts list indicate the parts numbers of "the standardization of genuine parts at present".
   Regarding engineering parts changes in our engineering department, refer to Sony service bulletins and service manual supplements.

3. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

4. Abbreviations

Ref. No.	Description
C□□, CV□□	CAPACITOR
CN□□	CONNECTOR
CP□□	COMBINATION
D□□	PARTS
DL□□	DIODE
F□□	DELAY LINE
FL□□	FUSE
IC□□	FILTER
L□□, LV□□	IC
M□□	INDUCTOR
R□□, RV□□	MOTOR
RB□□	RESISTOR
RY□□	RESISTOR BLOCK
S□□, SW□□	RELAY
SB□□	SWITCH
T□□	SOLAR BATTERY
TH□□	TRANSFORMER
X□□	THERMISTOR

5. Units for Capacitors, Inductors and Resistors.
   The following units are assumed in schematic diagrams and repair parts list unless otherwise specified :
   Capacitors : μF
   Inductors : μH
   Resistors : Ω

2-7. FIXTURES

J-6093-490-A	EXTENSION BOARD ASSEMBLY
J-6093-570-A	IC EXTENSION TOOL, 68-PIN PLCC
J-6200-200-A	KEYTOP EXTENTION TOOL
J-6082-092-A	VS-42 EXTENTION CABLE
J-6082-093-A	VS-42 EXTENTION BOARD

CHAPTER 5
COMPUTER SCHEMATIC DIAGRAM

5-1. SEMICONDUCTOR PIN ASSIGNMENTS

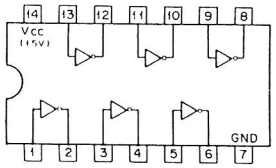
TYPE	PAGE
1SS120	5-22
1SS123	5-22
1SS135E	5-22
1SS168	5-22
1SS223	5-22
1SS226	5-22
1T33C-01	5-22
2SA1162	5-22
2SA812	5-22
2SC1583	5-22
2SC1623	5-22
2SC2411K-CQ	5-22
2SC2655	5-22
2SC4237	5-22
2SC458C	5-22
2SD1030	5-22
74AC00SJ	5-4
74F04SJ	5-2
74F08SJ	5-2
74F157APC	5-21
74F32SJ	5-2
74F373SJ	5-4
AM29827ASC	5-4
AN1431T	5-19
CX20061	
CX23065A	5-11
CXD1030M	5-17
CXD1172M	5-17
D10LCA20	5-22
D1NL20	5-22
D3SB60	5-22
DFG1A8	5-22
DS1000M-50	5-5
DS1287	5-5
ERC38-06	5-21
FA1A4P-L34	5-22
FE3001	5-12
FE3010B	5-13
FE3021	5-14
FE3031	5-14
FN1A4P-M34	5-22
FN1A4Z-M68	5-22
HZ5A3	5-22
HZ5C3	5-22
HZ6B2	5-22

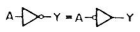
TYPE	PAGE
LA7801	5-11
LM386N	5-11
M5F7805	5-19
M5F79M05	5-20
M5F79M12	5-20
MA152WK	5-21
MB3771DIP	5-19
MB81256-10PSZ	5-9
MB81464-10PSZ	5-9
MB81C4256-10PSZ	5-9
MC1488M	5-3
MC1489AM	5-3
MC74HC4053N	5-4
N13T1	5-22
N80286-10	5-16
NJM7805A	5-19
NJM78L05A	5-20
NJM78L09A	5-20
NJM79M12A	5-20
NT108PRO-35VOA99P	5-5
P8742AH	5-6
PC111S	5-22
PVGA1A	5-8
RC7805FA	5-19
RC78L05A	5-20
RC78L09A	5-20
RC79L09A	5-20
RD4.7ES-B2	5-22
RD5.1ES-B3	5-22
RD5.6ES-B3	5-22
S15SC4M	5-22
SN7406NS	5-2
SN74ALS10NS	5-2
SN74ALS10ANS	5-2
SN74LS32NS	5-2
SN74F240NS	5-3
SN74F241NS	5-3
SN74HC14N	5-4

TYPE	PAGE
SN74LS04NS	5-2
SN74LS06N	5-2
SN74LS125AN	5-2
SN74LS125ANS	5-2
SN74LS126ANS	5-2
SN74LS138NS	5-2
SN74LS244NS	5-3
SN74LS245NS	5-3
SN74LS32NS	5-2
SN74LS74ANS	5-2
STR9012	5-19
TA78L009AP	5-20
TC74HC00F	5-4
TC74HC123F	5-4
TC74HC123P	5-4
TC74HC14F	5-4
TC74HC221F	5-4
TC74HC4053AP	5-4
TC74HC74AP	5-4
TL084CN	5-11
TL601CPS	5-11
TMM2018AP-25	5-9
μ PC1241H	
μ PC324C	5-11
μ PC358C	5-11
μ PC358G2	5-11
μ PC393C	5-11
μ PC79M05H	5-20
μ PC79M12H	5-20
μ PD27C512C-15	5-10
μ PD27C512D-15	5-10
μ PD42102G-3	5-11
μ PD65005GC-306-3B6	GATE ARRAY
μ PD65006GF-325-3B8	GATE ARRAY
μ PD65013S-526	GATE ARRAY
μ PD65013GB-A31-3B4	GATE ARRAY
μ PD6902C	5-17
V19C	5-21
V7020	5-18
VL16C452QC	5-6
WD37C65BJM	5-7

74F04SJ (FSC) FLAT PACKAGE
SN74LS04NS (TI) FLAT PACKAGE

TTL INVERTER
– TOP VIEW –





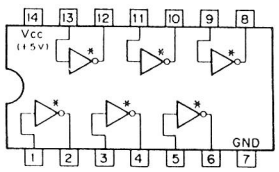
$Y = \overline{A}$

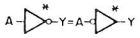
A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

SN7406NS (TI) FLAT PACKAGE
SN74LS06N (TI)

TTL INVERTER BUFFER/DRIVER WITH OPEN-COLLECTOR
– TOP VIEW –





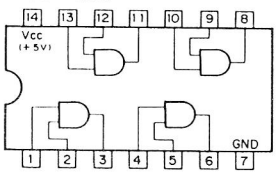
$Y = \overline{A}$

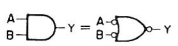
A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL
*; OPEN COLLECTOR

74F08SJ (FSC) FLAT PACKAGE

TTL 2-INPUT POSITIVE-AND GATE
– TOP VIEW –





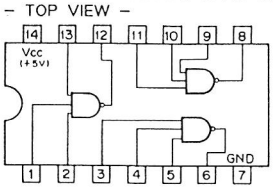
$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

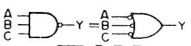
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74ALS10ANS (TI) FLAT PACKAGE
SN74ALS10NS (TI) FLAT PACKAGE

TTL 3-INPUT POSITIVE NAND GATE
– TOP VIEW –





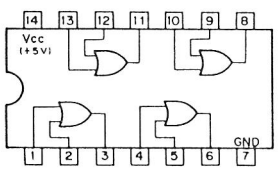
$Y = \overline{A}\overline{B}\overline{C} + \overline{A} + \overline{B} + \overline{C}$

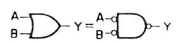
A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

0 : LOW LEVEL
1 : HIGH LEVEL

74F32SJ (FSC) FLAT PACKAGE
SN74ALS32NS (TI) FLAT PACKAGE
SN74LS32NS (TI) FLAT PACKAGE

TTL 2-INPUT POSITIVE-OR GATE
– TOP VIEW –





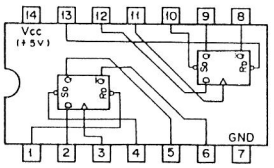
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74LS74ANS (TI) FLAT PACKAGE

TTL D-TYPE FLIP FLOP WITH DIRECT SET/RESET
– TOP VIEW –

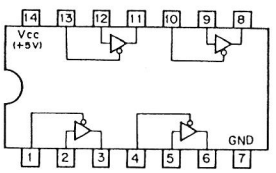


INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Q_{n+1}}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1*	1*
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Q_n}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
1*; NONSTABLE

SN74LS125AN (TI)
SN74LS125ANS (TI) FLAT PACKAGE

TTL BUS BUFFER GATES WITH 3-STATE OUTPUTS
– TOP VIEW –

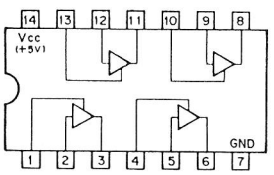


$\overline{G}$	A	Y
0	0	0
0	1	1
1	X	HI-Z

0; LOW LEVEL X; DON'T CARE
1; HIGH LEVEL HI-Z; HIGH IMPEDANCE

SN74LS126ANS (TI) FLAT PACKAGE

TTL BUS BUFFER GATE WITH 3-STATE OUTPUT
– TOP VIEW –

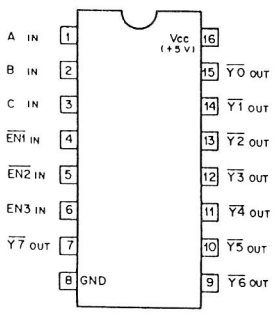


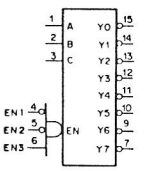
G	A	Y
1	1	1
1	0	0
0	X	HI-Z

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE

SN74LS138NS (TI) FLAT PACKAGE

TTL 3-TO-8-LINE DECODER/DEMULTIPLEXER
– TOP VIEW –





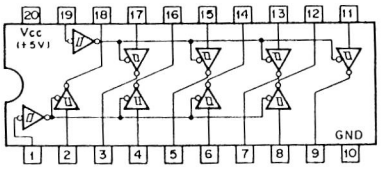
INPUTS				OUTPUTS							
EN	C	B	A	$\overline{Y7}$	$\overline{Y6}$	$\overline{Y5}$	$\overline{Y4}$	$\overline{Y3}$	$\overline{Y2}$	$\overline{Y1}$	$\overline{Y0}$
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

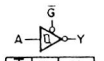
$EN = EN_1 \cdot EN_2 \cdot EN_3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74F240NS (TI) FLAT PACKAGE

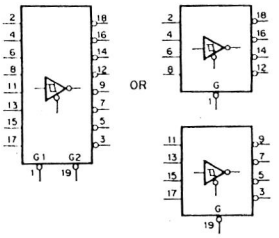
TTL 3-STATE SCHMITT TRIGGER INVERTER/LINE DRIVER
– TOP VIEW –





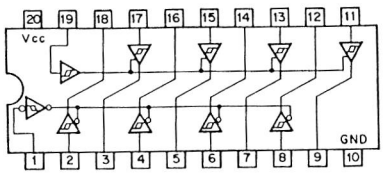
$\overline{G}$	A	Y
0	0	1
0	1	0
1	X	HI-Z

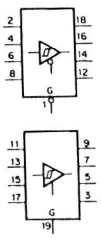
0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE
HI-Z;HIGH IMPEDANCE

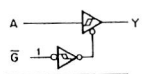


SN74F241NS (TI) FLAT PACKAGE

TTL 3-STATE SCHMITT TRIGGER BUFFER/LINE DRIVER
– TOP VIEW –

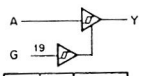






$\overline{G}$	A	Y
0	0	0
0	1	1
1	0	HI-Z
1	1	HI-Z

HI-Z;
HIGH IMPEDANCE

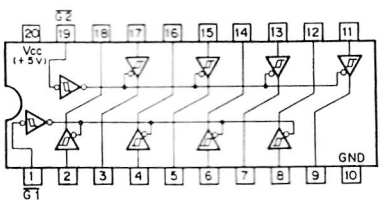


G	A	Y
0	0	HI-Z
0	1	HI-Z
1	0	0
1	1	1

HI-Z;
HIGH IMPEDANCE

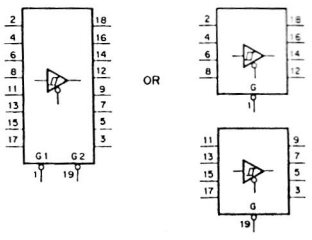
SN74LS244NS (TI) FLAT PACKAGE

TTL 3-STATE SCHMITT TRIGGER BUFFER/DRIVER
– TOP VIEW –



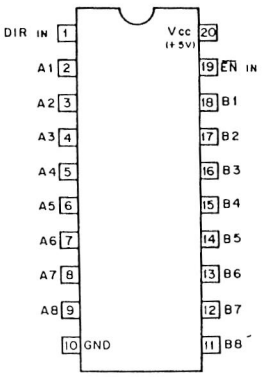
$\overline{G}$	A	Y
0	0	0
0	1	1
1	X	HI-Z

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE
HI-Z;HIGH IMPEDANCE



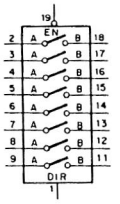
SN74LS245NS (TI) FLAT PACKAGE

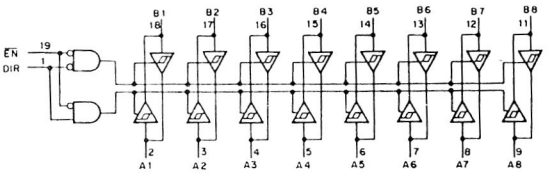
TTL BILATERAL SCHMITT TRIGGER BUS TRANSCEIVERS
WITH 3-STATE OUTPUTS
– TOP VIEW –



$\overline{EN}$	DIR	OPERATION
0	0	B to A
0	1	A to B
1	X	HI-Z

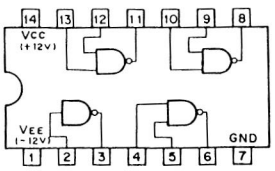
0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE
HI-Z;HIGH IMPEDANCE

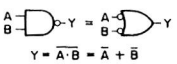




MC1488M (MOTOROLA) FLAT PACKAGE

2-INPUT (1-INPUT) POSITIVE-NAND LINE DRIVER
– TOP VIEW –





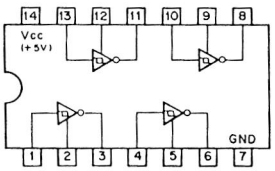
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

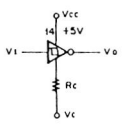
0;LOW LEVEL
1;HIGH LEVEL

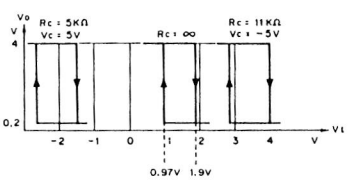
MC1489AM (MOTOROLA) FLAT PACKAGE

QUADRUPLE LINE RECEIVER
– TOP VIEW –

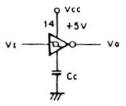


INPUT THRESHOLD SHIFTING



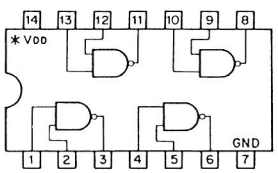


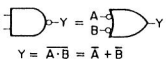
INPUT NOISE FILTERING



74AC00SJ (FSC) FLAT PACKAGE
TC74HC00F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
– TOP VIEW –





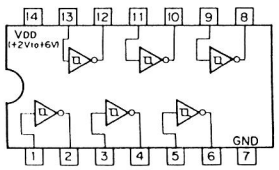
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

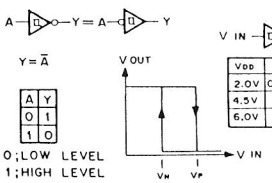
0; LOW LEVEL
1; HIGH LEVEL

*VDD AC, HC; +2 to +6V
HCT; +5V

TC74HC14F (TOSHIBA) FLAT PACKAGE
TC74HC14N (TI) FLAT PACKAGE

C-MOS SCHMITT TRIGGER INVERTER
– TOP VIEW –





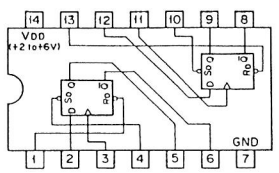
A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

VDD	VH	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

TC74HC74AP (TOSHIBA)

C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
– TOP VIEW –

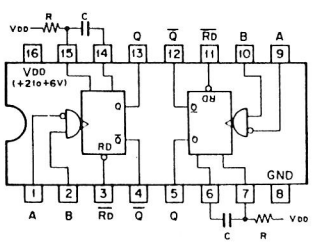


INPUTS				OUTPUTS	
S̄D	R̄D	CK	D	Qn+1	Q̄n+1
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	Q̄n

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

TC74HC123F (TOSHIBA) FLAT PACKAGE
TC74HC123P (TOSHIBA)

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
– TOP VIEW –



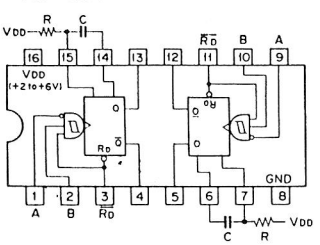
INPUT			OUTPUT	
R̄D	A	B	Q	Q̄
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↓	⎍	⎍
1	↓	1	⎍	⎍
↓	0	1	⎍	⎍

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

TC74HC221F (TOSHIBA) FLAT PACKAGE

C-MOS MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
– TOP VIEW –



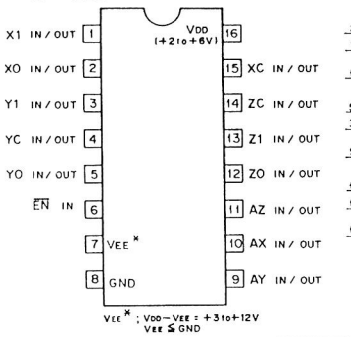
INPUTS			OUTPUTS	
R̄D	A	B	Q	Q̄
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⎍	⎍
1	↓	1	⎍	⎍
↑	0	1	⎍	⎍

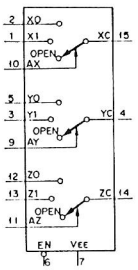
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.7CR

MC74HC4053N (MOTOROLA)
TC74HC4053AP (TOSHIBA)

C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –


X1 IN / OUT 1
XO IN / OUT 2
Y1 IN / OUT 3
YC IN / OUT 4
YO IN / OUT 5
EN IN 6
VEE* 7
GND 8
VDD (+2 to +6V) 16
15 XC IN / OUT
14 ZC IN / OUT
13 Z1 IN / OUT
12 ZO IN / OUT
11 AZ IN / OUT
10 AX IN / OUT
9 AY IN / OUT
VEE* ; VDD – VEE = +3 to +12V
VEE ≤ GND

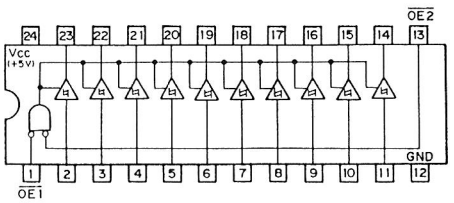


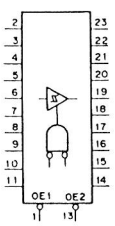
CONT. INPUTS		ON
EN	A (X, Y, Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

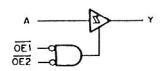
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

Am29827ASC (AMD) FLAT PACKAGE

3-STATE 10-BIT BUS DRIVERS
– TOP VIEW –





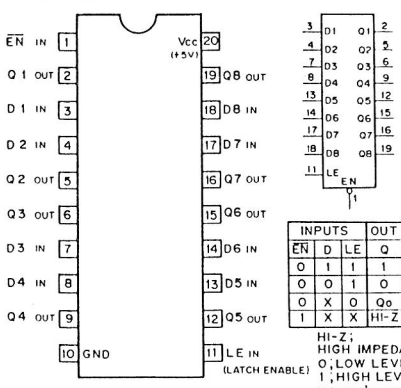


OE1	OE2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

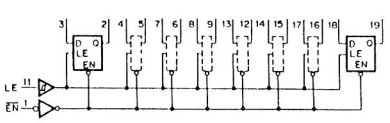
74F373SJ (FSC) FLAT PACKAGE

TTL 3-STATE OUTPUTS OCTAL LATCHES
– TOP VIEW –



INPUTS			OUT
EN	D	LE	Q
0	1	1	1
0	0	1	0
0	X	0	Q0
1	X	X	HI-Z

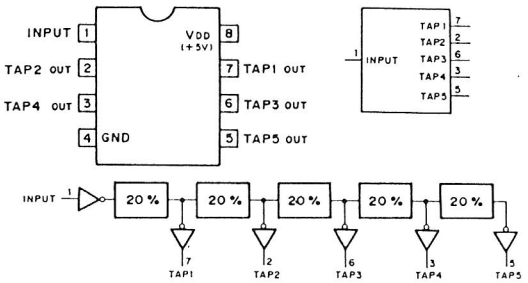
HI-Z; HIGH IMPEDANCE
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE



DS1000M-50 (DELAY TIME = 50nS) (DALLAS SEMICONDUCTOR)

5 TAP SILLCON DELAY LINE

- TOP VIEW -

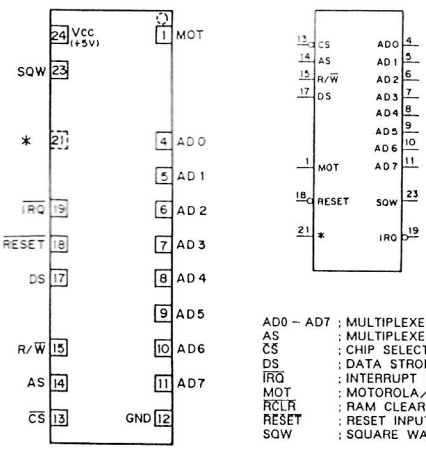


TYPE. NO.	DELAY TIME (nS)				
	TAP1	TAP2	TAP3	TAP4	TAP5
DS1000M-50	10	20	30	40	50
DS1000M-60	12	24	36	48	60
DS1000M-75	15	30	45	60	75
DS1000M-100	20	40	60	80	100
DS1000M-125	25	50	75	100	125
DS1000M-150	30	60	90	120	150
DS1000M-175	35	70	105	140	175
DS1000M-200	40	80	120	160	200
DS1000M-250	50	100	150	200	250
DS1000M-500	100	200	300	400	500

DS1287 (DALLAS SEMICONDUCTOR)

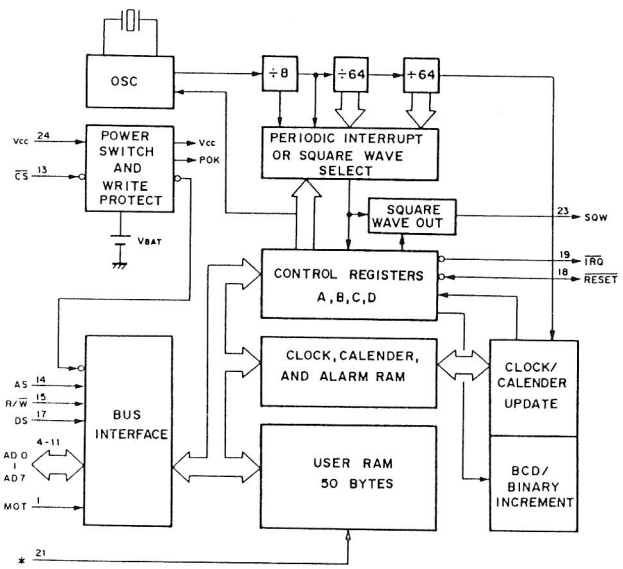
C-MOS REAL-TIME CLOCK PLUS RAM

- BOTTOM VIEW -



AD0 – AD7	; MULTIPLEXED ADDRESS/DATA BUS
AS	; MULTIPLEXED ADDRESS STROBE
$\overline{CS}$	; CHIP SELECT
DS	; DATA STROBE
$\overline{IRQ}$	; INTERRUPT REQUEST (OPEN DRAIN)
MOT	; MOTOROLA/INTEL BUS TYPE SELECTION
$\overline{RCLR}$	; RAM CLEAR (ONLY DS1287A)
$\overline{RESET}$	; RESET INPUT
SQW	; SQUARE WAVE OUTPUT

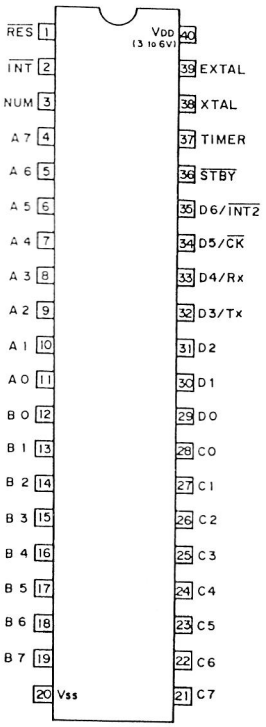
* 21 PIN DS1287 ; NC(BE MISSING BY DESIGN)
DS1287A ; $\overline{RCLR}$

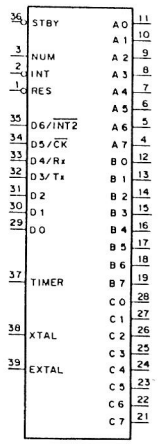


NT108PR0-35V0A99P

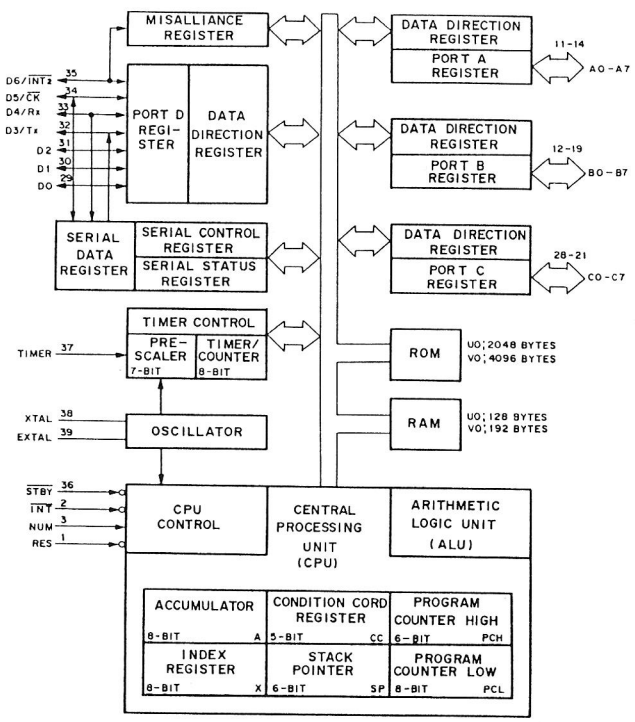
C-MOS MICROCOMPUTER UNIT

- TOP VIEW -





A0 – A7	; PORT A INPUTS/OUTPUTS
B0 – B7	; PORT B INPUTS/OUTPUTS
C0 – C7	; PORT C INPUTS/OUTPUTS
$\overline{CK}$	; SERIAL INTERFACE CLOCK INPUT
D0 – D6	; PORT D INPUTS/OUTPUTS
EXTAL	; EXTERNAL CLOCK INPUT OR CRYSTAL CONNECTION
$\overline{INT}$	; INTERRUPTION 1 INPUT
$\overline{INT2}$	; INTERRUPTION 2 INPUT
NUM	; NON-USER MODE (FIXED V_{SS} LEVEL)
$\overline{RES}$	; RESET INPUT
Rx	; SERIAL DATA RECEIVE
$\overline{STBY}$	; STANDBY SIGNAL INPUT
TIMER	; TIMER CONTROL INPUT
Tx	; SERIAL DATA TRANSFER

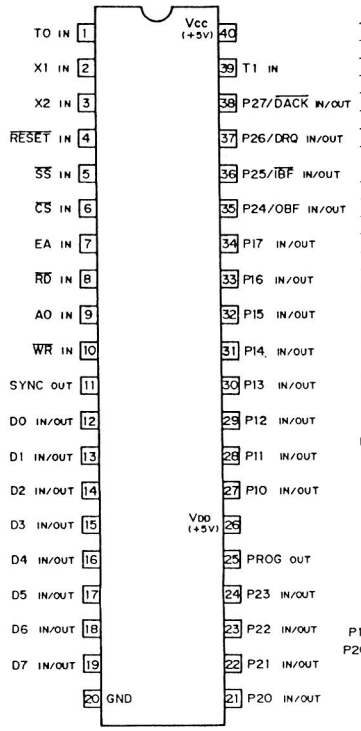


VIW-5600D (EK)

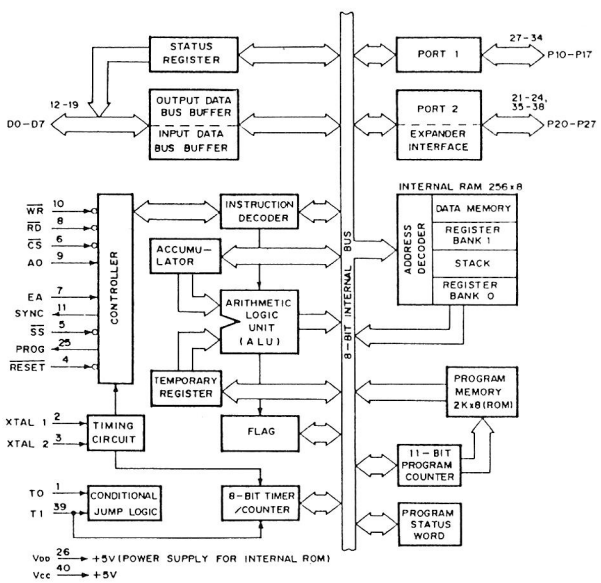
P8742AH (INTEL)

N-MOS SINGLE CHIP 8-BIT MICROCOMPUTER

– TOP VIEW –



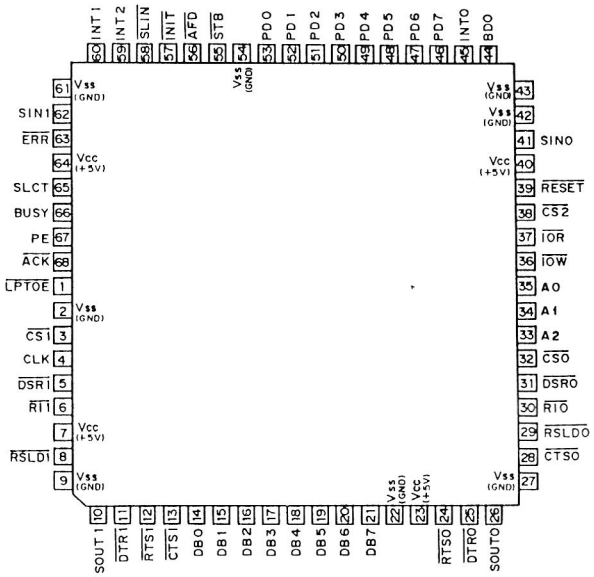
D0–D7 ; DATA INPUTS/OUTPUTS
SS ; SINGLE STEP INPUT
CS ; CHIP SELECT INPUT
EA ; EXTERNAL ADDRESS INPUT
RD ; READ STROBE INPUT
AO ; ADDRESS O INPUT
WR ; WRITE STROBE INPUT
TO,T1 ; TEST INPUTS
X1, X2 ; CRYSTAL
PROG ; STROBE PULSE OUTPUT/PROGRAM PULSE INPUT
P10–P17 ; INPUT/OUTPUT PORT1
P20–P27 ; INPUT/OUTPUT PORT2
OBF ; OUTPUT BUFFER FULL FLAG OUTPUT
IBF ; INPUT BUFFER FULL FLAG OUTPUT
DRQ ; DIRECT MEMORY ACCESS REQUEST OUTPUT
DACK ; DIRECT MEMORY ACCESS ACKNOWLEGDE OUTPUT

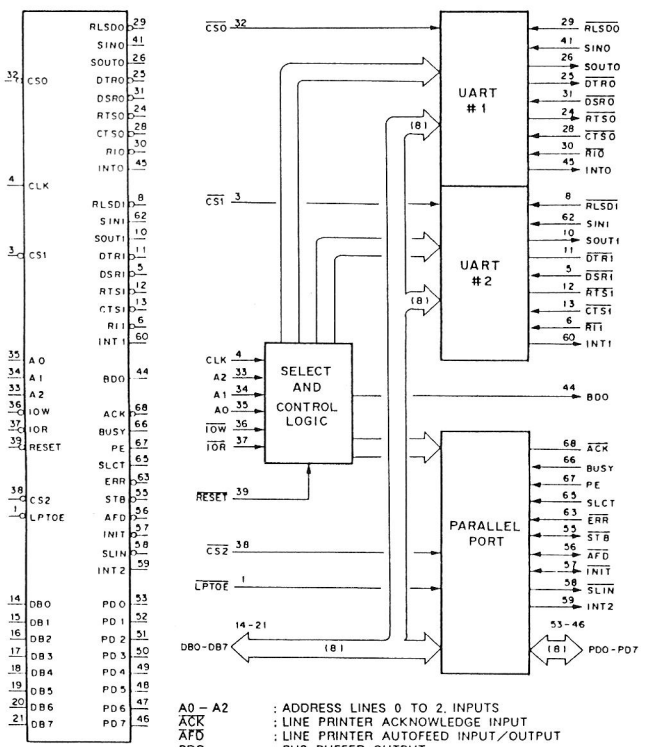


VL16C452QC (VLSI TECHNOLOGY)

C-MOS DUAL HIGH SPEED UART WITH CENTRONICS PRINTER PORT (PLCC PACKAGE)

– TOP VIEW –



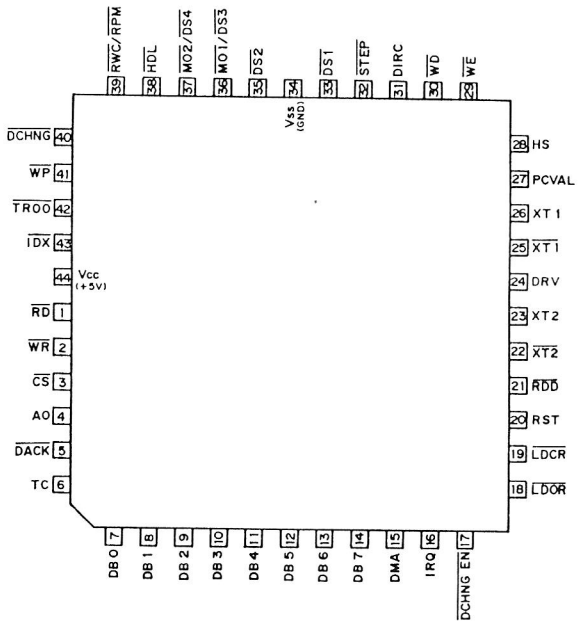


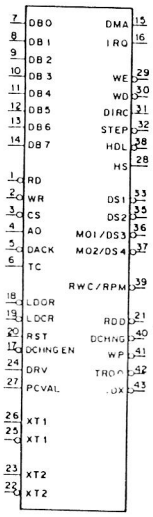
A0 – A2 ; ADDRESS LINES 0 TO 2, INPUTS
ACK ; LINE PRINTER ACKNOWLEDGE INPUT
AFD ; LINE PRINTER AUTOFEED INPUT/OUTPUT
BDO ; BUS BUFFER OUTPUT
BUSY ; LINE PRINTER BUSY INPUT
CLK ; CLOCK INPUT
CS0, CS1 ; CHIP SELECT INPUTS 0 AND 1 FOR SERIAL CHANNELS
CS3 ; CHIP SELECT INPUT 3 FOR LINE PRINTER PORT
CTS0, CTS1 ; CLEAR TO SEND INPUTS 0 AND 1
DB0 – DB7 ; DATA BITS 0 TO 7, INPUTS/OUTPUTS
DSR0, DSR1 ; DATA SET READY INPUTS 0 AND 1
DTR0, DTR1 ; DATA TERMINAL READY LINES 0 AND 1
ERROR ; LINE PRINTER ERROR INPUT
INIT ; LINE PRINTER INITIALIZE INPUT/OUTPUT
INT0, INT1 ; SERIAL CHANNEL INTERRUPT OUTPUTS 0 AND 1
INT2 ; PRINTER PORT INTERRUPT OUTPUT
IOR ; INPUT/OUTPUT READ STROBE INPUT
IOW ; INPUT/OUTPUT WRITE STROBE INPUT
LPTOE ; LINE PRINTER OUTPUT ENABLE INPUT
PD0 – PD7 ; PARALLEL DATA BITS 0 TO 7, INPUTS/OUTPUTS
PE ; LINE PRINTER PAPER EMPTY INPUT
RESET ; RESET INPUT
RI0, RI1 ; RING INDICATOR INPUTS 0 AND 1
RLSD0, RLSD1 ; RECEIVE LINE SIGNAL DETECT INPUTS 0 AND 1
RTS0, RTS1 ; REQUEST TO SEND OUTPUTS 0 AND 1
SIN0, SIN1 ; SERIAL DATA INPUTS 0 AND 1
SLCT ; LINE PRINTER SELECTED INPUT
SLIN ; LINE PRINTER SELECT INPUT/OUTPUT
SOUT0, SOUT1 ; SERIAL DATA OUTPUTS 0 AND 1
STB ; LINE PRINTER STROBE INPUT/OUTPUT

VIW-5600D (EK)

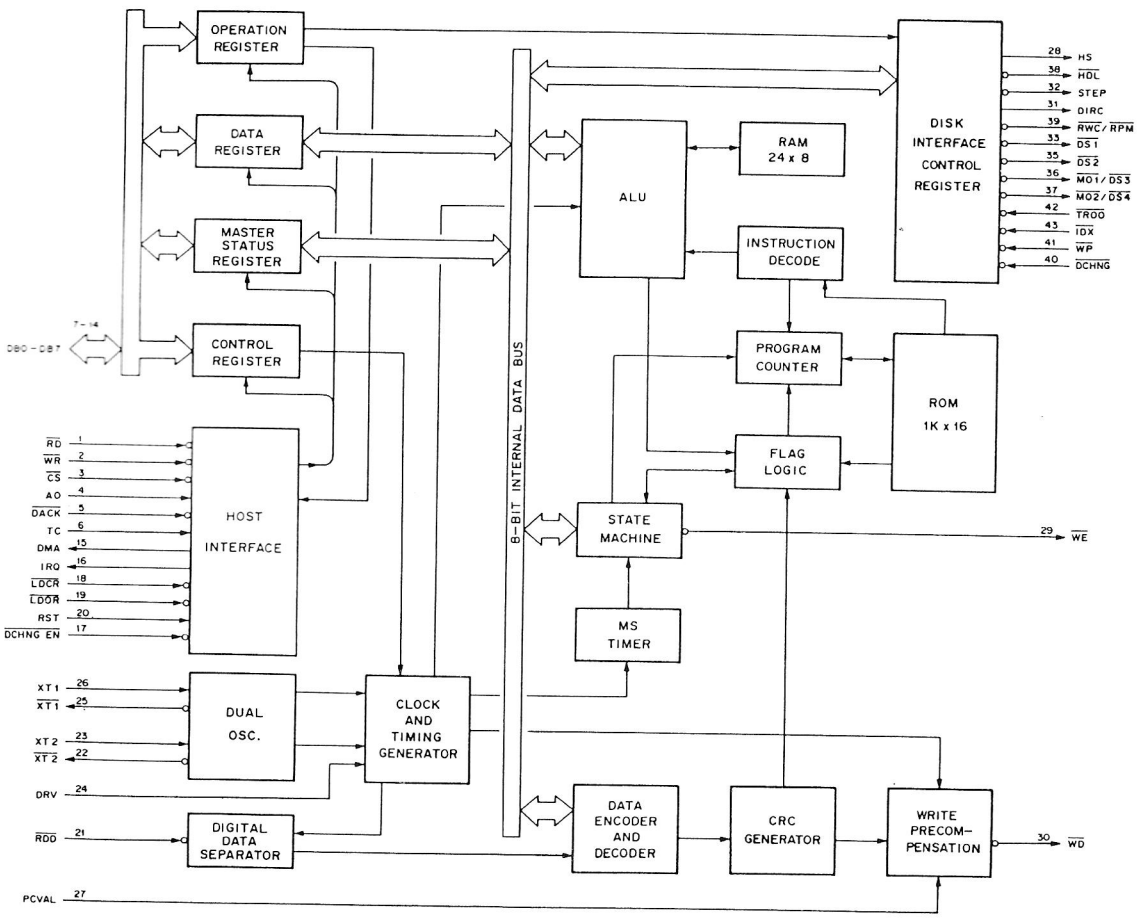
WD37C65BJM (WESTERN DIGITAL)

C-MOS FLOPPY-DISK SUBSYSTEM CONTROLLER (PLCC PACKAGE)
– TOP VIEW –





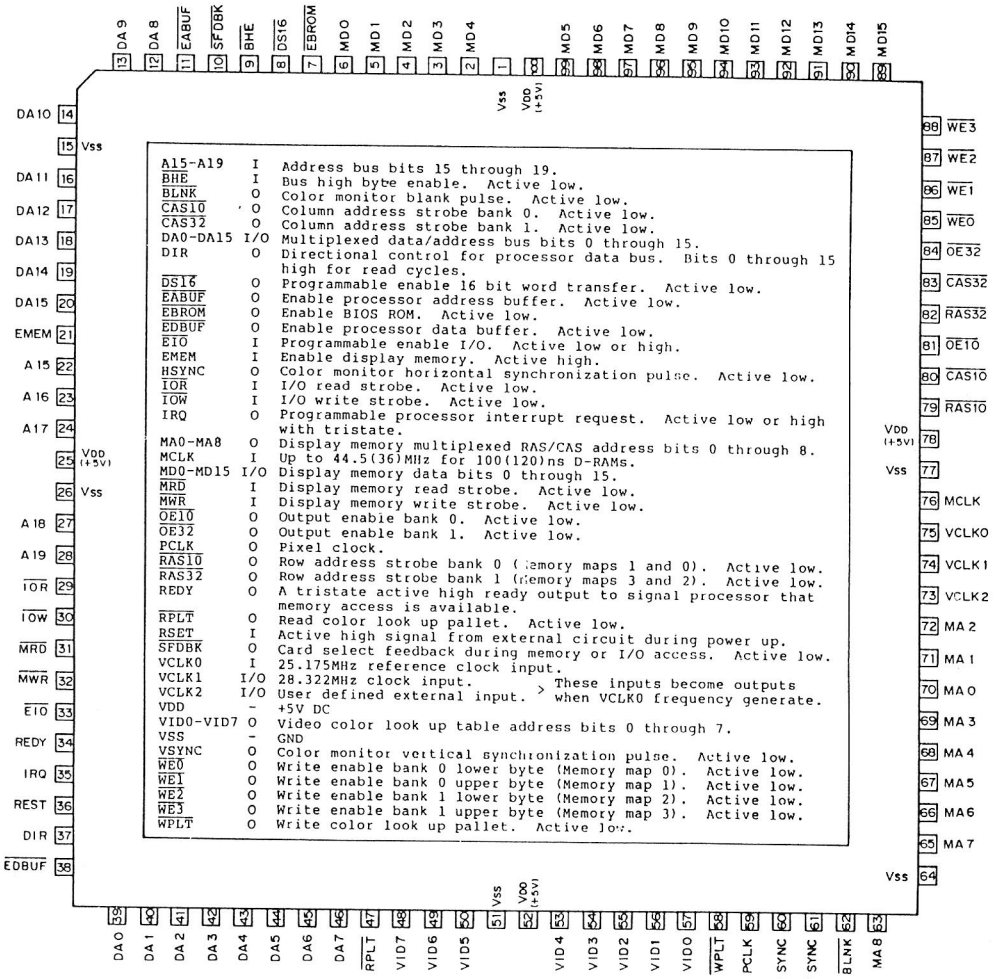
A0	;	ADDRESS LINE, INPUT
$\overline{CS}$	;	CHIP SELECT, INPUT
$\overline{DACK}$	;	DMA ACKNOWLEDGE, INPUT
DB0-DB7	;	DATA BUS LINES 0 thru 7, INPUTS/OUTPUTS
$\overline{DCHNG}$	;	DISK CHANGE, INPUT
$\overline{DCHNG\ EN}$	;	DISK CHANGE ENABLE, INPUT
DIRC	;	DIRECTION ($\overline{INWARD}$/OUTWARD), OUTPUT
DMA	;	DIRECT MEMORY ACCESS, OUTPUT
$\overline{DRV}$	;	DRIVE TYPE, INPUT
$\overline{DS1}$-$\overline{DS4}$	;	DRIVE SELECTS 1 thru 4, OUTPUTS
$\overline{HDL}$	;	HEAD LOADED, OUTPUT
$\overline{HS}$	;	HEAD SELECT ($\overline{SIDE\ 1}$/SIDE 0), OUTPUT
$\overline{IDX}$	;	INDEX, INPUT
$\overline{IRQ}$	;	INTERRUPT, OUTPUT
$\overline{LDCR}$	;	LOAD CONTROL REGISTER, INPUT
$\overline{LDOR}$	;	LOAD OPERATIONS REGISTER, INPUT
$\overline{MO1}$,$\overline{MO2}$	;	MOTOR ON 1 and MOTOR ON 2, OUTPUTS
PCVAL	;	PRECOMPENSATION VALUE SELECT, INPUT
$\overline{RD}$	;	READ, INPUT
$\overline{RDD}$	;	READ DISK DATA, INPUT
$\overline{RPM}$	;	REVOLUTIONS PER MINUTE, OUTPUT
$\overline{RST}$	;	RESET, INPUT
$\overline{RWC}$	;	REDUCED WRITE CURRENT, OUTPUT
$\overline{STEP}$	;	STEP PULSE, OUTPUT
$\overline{TC}$	;	TERMINAL COUNT, INPUT
$\overline{TROO}$	;	TRACK 00, INPUT
VCC	;	+5V DC
VSS	;	GROUND
$\overline{WE}$	;	WRITE ENABLE, OUTPUT
$\overline{WD}$	;	WRITE DATA, OUTPUT
$\overline{WP}$	;	WRITE PROTECTED, INPUT
$\overline{WR}$	;	WRITE, INPUT
XT1,$\overline{XT1}$	;	XTAL1 INPUT and OUTPUT
XT2,$\overline{XT2}$	;	XTAL2 INPUT and OUTPUT



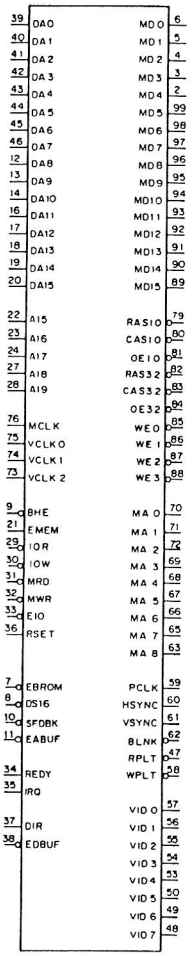
PVGA1A (PARADISE SYSTEMS)

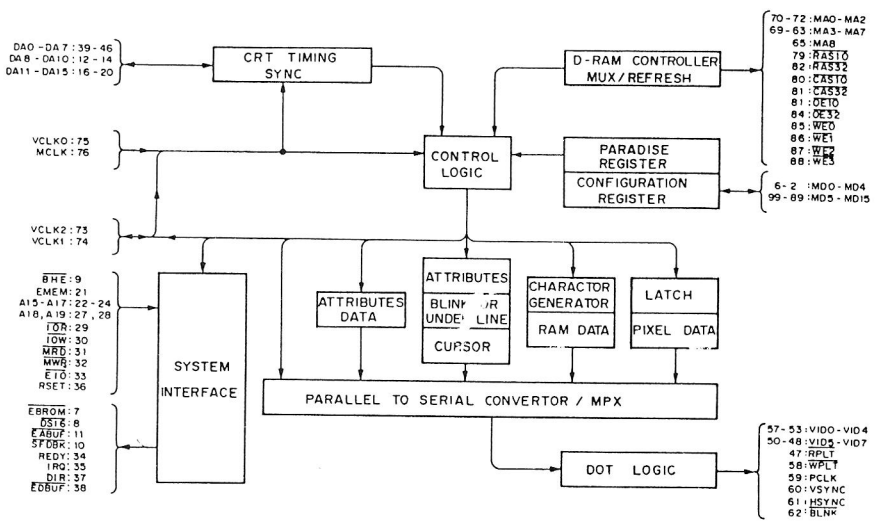
C-MOS VIDEO GRAPHICS ARRAY (PLCC PACKAGE)

– TOP VIEW –



A15-A19	I	Address bus bits 15 through 19.
BHE	I	Bus high byte enable. Active low.
BLNK	O	Color monitor blank pulse. Active low.
CAS10	O	Column address strobe bank 0. Active low.
CAS32	O	Column address strobe bank 1. Active low.
DA0-DA15	I/O	Multiplexed data/address bus bits 0 through 15.
DIR	O	Directional control for processor data bus. Bits 0 through 15 high for read cycles.
DS16	O	Programmable enable 16 bit word transfer. Active low.
EABUF	O	Enable processor address buffer. Active low.
EBROM	O	Enable BIOS ROM. Active low.
EDBUF	O	Enable processor data buffer. Active low.
EIO	I	Programmable enable I/O. Active low or high.
EMEM	I	Enable display memory. Active high.
HSYNC	O	Color monitor horizontal synchronization pulse. Active low.
IOR	I	I/O read strobe. Active low.
IOW	I	I/O write strobe. Active low.
IRQ	O	Programmable processor interrupt request. Active low or high with tristate.
MA0-MA8	O	Display memory multiplexed RAS/CAS address bits 0 through 8.
MCLK	I	Up to 44.5(36)MHz for 100(120)ns D-RAMs.
MD0-MD15	I/O	Display memory data bits 0 through 15.
MRD	I	Display memory read strobe. Active low.
MWR	I	Display memory write strobe. Active low.
OE10	O	Output enable bank 0. Active low.
OE32	O	Output enable bank 1. Active low.
PCLK	O	Pixel clock.
RAS10	O	Row address strobe bank 0 (Memory maps 1 and 0). Active low.
RAS32	O	Row address strobe bank 1 (Memory maps 3 and 2). Active low.
REDY	O	A tristate active high ready output to signal processor that memory access is available.
RPLT	O	Read color look up pallet. Active low.
RSET	I	Active high signal from external circuit during power up.
SFDBK	O	Card select feedback during memory or I/O access. Active low.
VCLK0	I	25.175MHz reference clock input.
VCLK1	I/O	28.322MHz clock input. > These inputs become outputs
VCLK2	I/O	User defined external input. > when VCLK0 frequency generate.
VDD	–	+5V DC
VID0-VID7	O	Video color look up table address bits 0 through 7.
VSS	–	GND
VSYNC	O	Color monitor vertical synchronization pulse. Active low.
WE0	O	Write enable bank 0 lower byte (Memory map 0). Active low.
WE1	O	Write enable bank 0 upper byte (Memory map 1). Active low.
WE2	O	Write enable bank 1 lower byte (Memory map 2). Active low.
WE3	O	Write enable bank 1 upper byte (Memory map 3). Active low.
WPLT	O	Write color look up pallet. Active low.

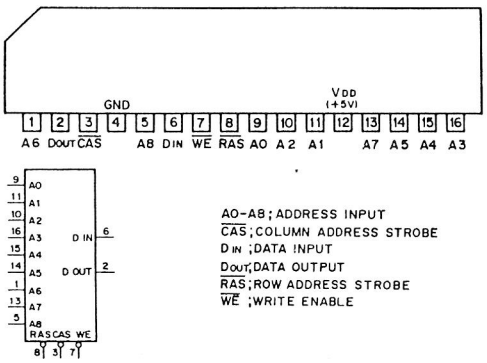




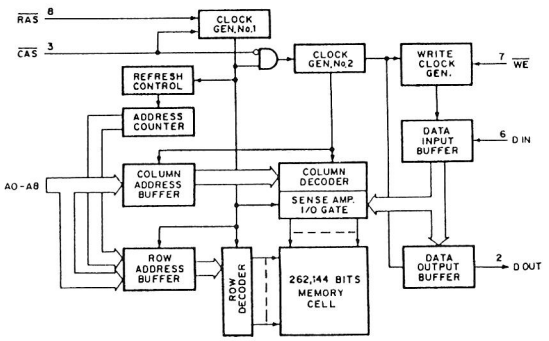
MB81256-10PSZ (FUJITSU) (ACCESS TIME = 100nS)

N-MOS 262,144-WORD BY 1-BIT DYNAMIC RAM

– SIDE VIEW –



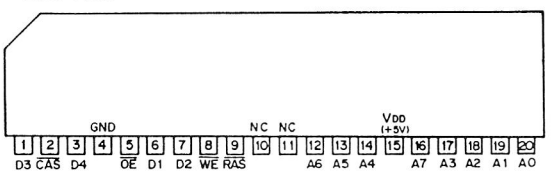
AO-A8 ; ADDRESS INPUT
$\overline{CAS}$; COLUMN ADDRESS STROBE
DIN ; DATA INPUT
DOUT ; DATA OUTPUT
$\overline{RAS}$; ROW ADDRESS STROBE
$\overline{WE}$; WRITE ENABLE

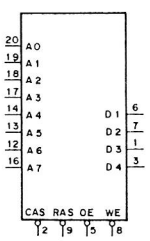


MB81464-10PSZ (FUJITSU) (ACCESS TIME = 100nS)

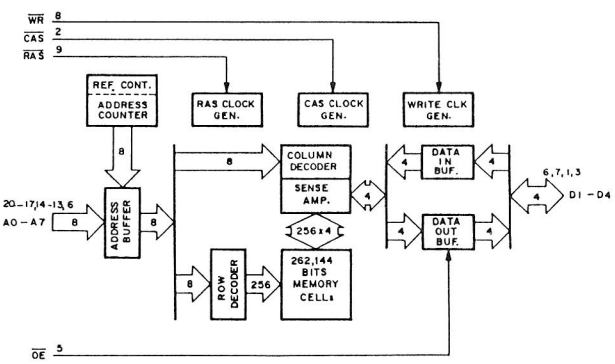
N-MOS 262,144-BIT (65,536x4) DYNAMIC RAM

– SIDE VIEW –





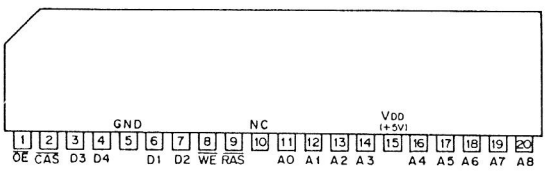
AO-A7 ; ADDRESS INPUT
$\overline{CAS}$; COLUMN ADDRESS STROBE
D1--D4 ; DATA IN/OUT
$\overline{OE}$; OUTPUT ENABLE
$\overline{RAS}$; ROW ADDRESS STROBE
$\overline{WE}$; WRITE ENABLE

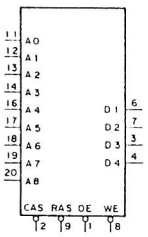


MB81C4256-10PSZ (FUJITSU) (ACCESS TIME = 100nS)

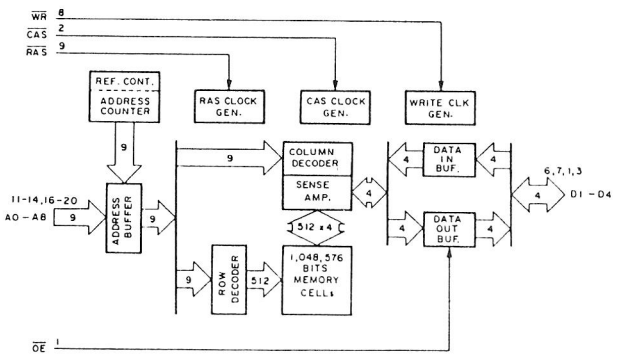
C-MOS 1,048,576-BIT (262,144x4) DYNAMIC RAM

– SIDE VIEW –





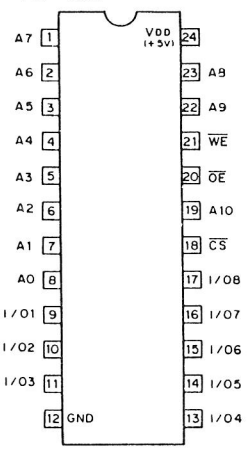
AO-A8 ; ADDRESS INPUT
$\overline{CAS}$; COLUMN ADDRESS STROBE
D1-D4 ; DATA IN/OUT
$\overline{OE}$; OUTPUT ENABLE
$\overline{RAS}$; ROW ADDRESS STROBE
$\overline{WE}$; WRITE ENABLE

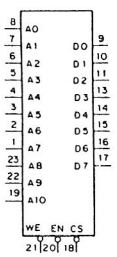


TMM2018AP-25 (TOSHIBA)

N-MOS 16384 (2048x8)-BIT STATIC RAM

– TOP VIEW –

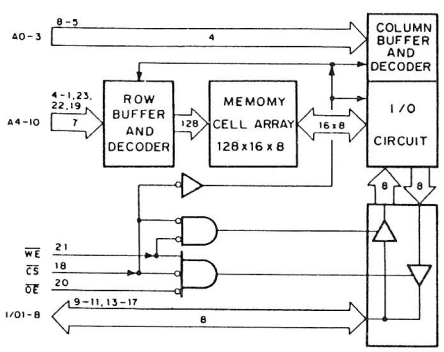




INPUTS			FUNCTION
$\overline{CS}$	$\overline{WE}$	$\overline{OE}$	
0	0	1	WRITE
0	1	0	READ
0	1	1	DISABLE (OUTPUT: HI-Z)
1	X	X	DISABLE (OUTPUT: HI-Z)

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

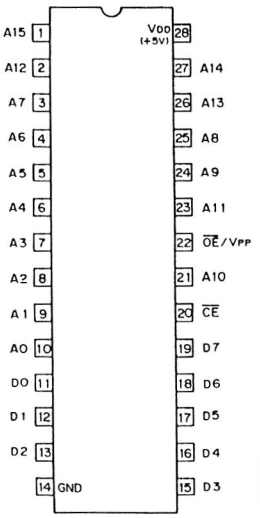
AO-10; ADDRESS INPUTS
I/O1-8; DATA INPUTS/OUTPUTS
$\overline{CS}$; CHIP SELECT INPUT
$\overline{OE}$; OUTPUT ENABLE INPUT
$\overline{WE}$; WRITE ENABLE INPUT

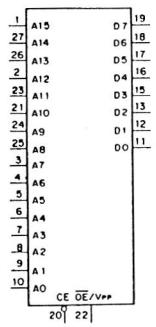


uPD27C512C-15 (NEC) (ACCESS TIME = 150nS)

C-MOS 512K (65,536x8 = 524,288)-BIT ONE TIME PROM

– TOP VIEW –

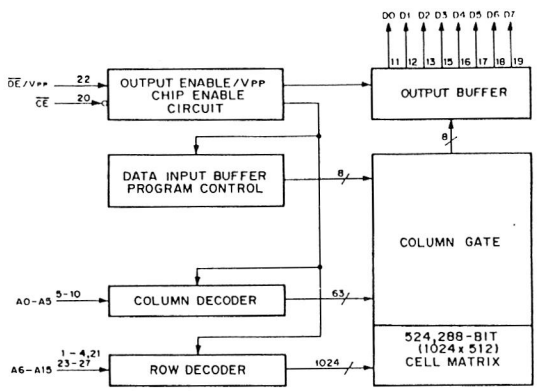




A0–A15; ADDRESS INPUTS
$\overline{CE}$; CHIP ENABLE INPUT
D0-D7; DATA OUTPUTS
$\overline{OE}$; OUTPUT ENABLE INPUT
VPP; PROGRAM POWER SUPPLY

An	$\overline{CE}$	$\overline{OE}$/Vpp	VDD	Dn	FUNCTION
AIN	0	0	+5V	DOUT	READ
AIN	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
AIN	0	+12.5V	+6V	DIN	PGM
AIN	0	0	+6V	DOUT	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

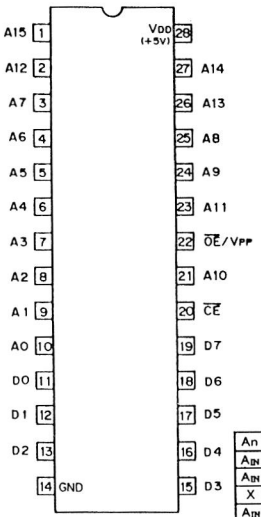
0; LOW LEVEL
1; HIGH LEVEL
HI-Z; HIGH IMPEDANCE
X; DON'T CARE

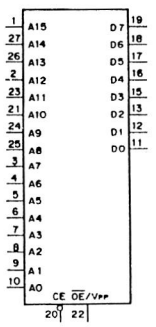


uPD27C512D-15 (NEC) (ACCESS TIME = 150nS)

C-MOS 512K (65,536x8 = 524,288)-BIT ERASABLE PROM

– TOP VIEW –

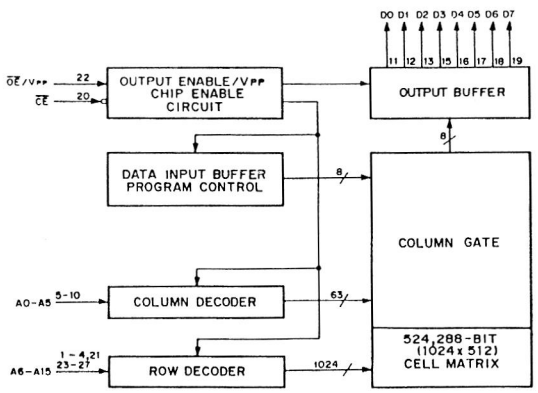




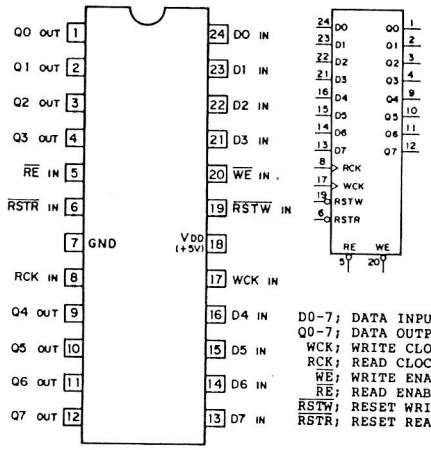
A0 – A15 : ADDRESS INPUTS
$\overline{CE}$: CHIP ENABLE INPUT
D0 – D7 : DATA OUTPUTS
$\overline{OE}$: OUTPUT ENABLE INPUT
VPP : PROGRAM POWER SUPPLY

An	$\overline{CE}$	$\overline{OE}$/VPP	VDD	Dn	FUNCTION
AIN	0	0	+5V	DOUT	READ
AIN	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
AIN	0	+12.5V	+6V	DIN	PGM
AIN	0	0	+6V	DOUT	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

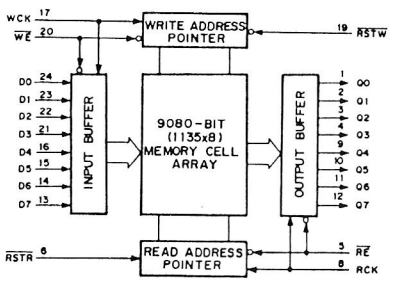
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE



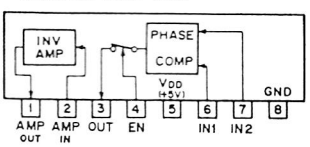
uPD42102G-3 (NEC) (ACCESS TIME = 21nS) FLAT PACKAGE
C-MOS 9080-BIT (1135x8) FIFO MEMORY
– TOP VIEW –



D0-7; DATA INPUTS
Q0-7; DATA OUTPUTS
WCK; WRITE CLOCK INPUT
RCK; READ CLOCK INPUT
WE; WRITE ENABLE INPUT
RE; READ ENABLE INPUT
RSTW; RESET WRITE INPUT
RSTR; RESET READ INPUT



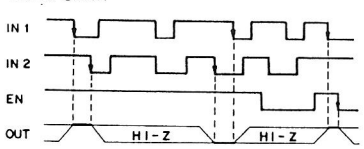
CX23065 (SONY)
N-MOS PHASE COMPARATOR WITH INVERSION AMPLIFIER
– PRINTED SIDE VIEW –



EN	OUT
1	ACTIVE
0	HIGH IMPEDANCE

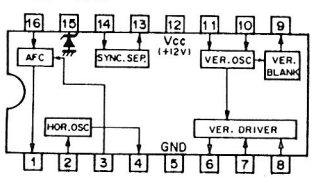
1; HIGH LEVEL
0; LOW LEVEL

TIMING CHART

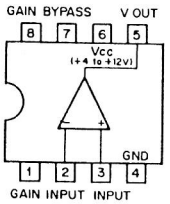


HI-Z; HI-IMPEDANCE

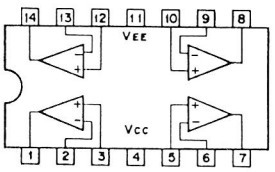
LA7801 (SANYO)
SYNCHRO, DEFLECTION CIRCUIT FOR COLOR TV
– TOP VIEW –



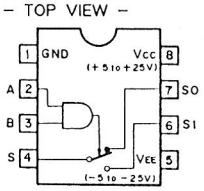
LM386N (NS)
LOW VOLTAGE AUDIO POWER AMPLIFIER
– TOP VIEW –

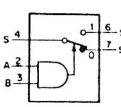


TL084CN (TI)
μPC324C
OPERATIONAL AMPLIFIER
(J FET-INPUT)
– TOP VIEW –



TL601CPS (TI) FLAT PACKAGE
P-MOS ANALOG SWITCH
– TOP VIEW –

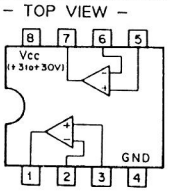




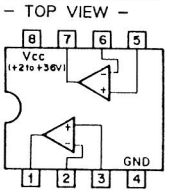
CONT IN A	CONT IN B	ON CHANNEL
0	0	SO
0	1	SO
1	0	SO
1	1	S1

0; LOW LEVEL
1; HIGH LEVEL

uPC358C (NEC)
uPC358G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
– TOP VIEW –



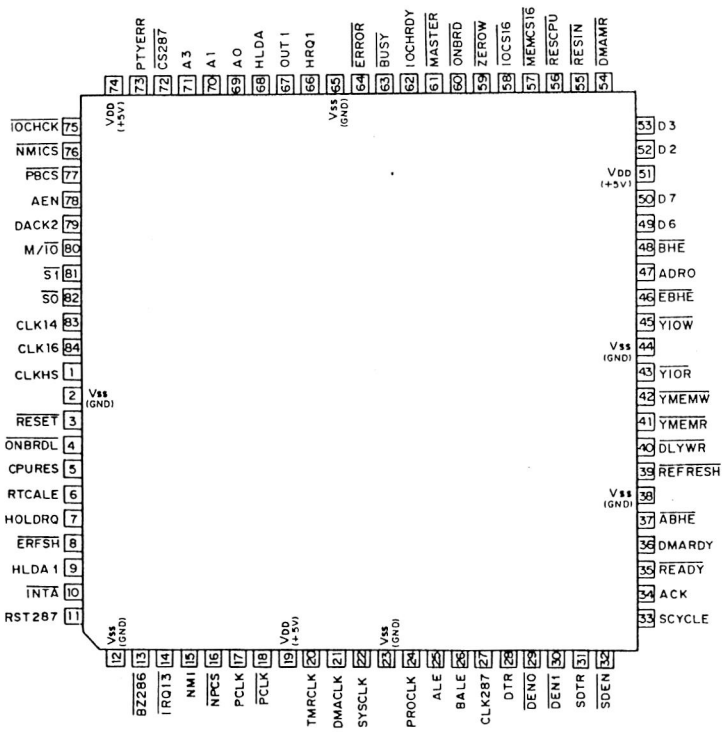
uPC393C (NEC)
VOLTAGE COMPARATOR
– TOP VIEW –

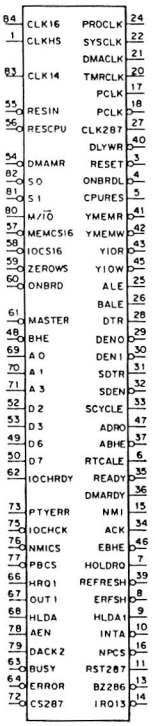


FE3001 (FARADAY ELECTRONICS)

C-MOS AT CONTROL LOGIC (PLCC PACKAGE)

– TOP VIEW –

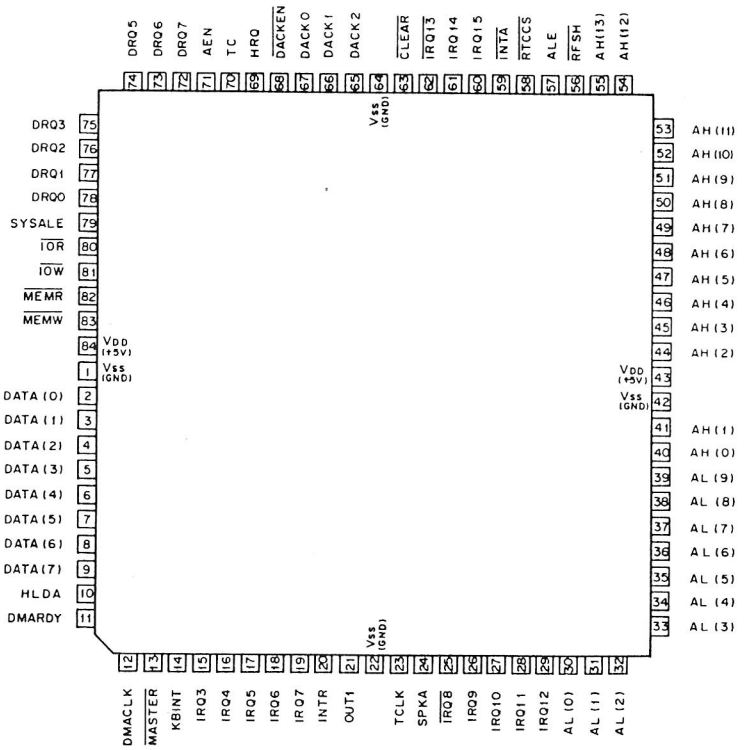


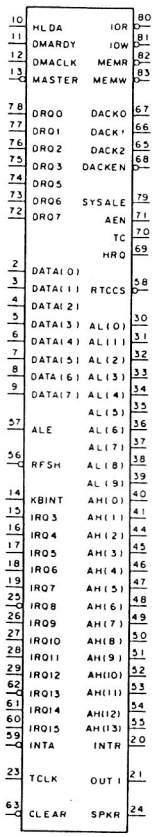


A0,A1,A3	I	Local 80286 address bus lines 0, 1 and 3.
ABHE	O	High byte enable for devices on local bus.
ACK	O	DMA acknowledge signal to the PC/AT bus.
ADR0	IO	Low byte enable. During a CPU cycle, A0 (pin 69) is latched with ALE (pin 25).
AEN	I	DMA cycle enable from FE3010B.
ALE	O	Local address latch enable.
BALE	O	Bus address latch enable (Programmable).
BHE	IO	High byte enable from 80286. Output during master and DMA cycle for memory control use.
BUSY	I	80287 co-processor busy.
BZ286	O	80287 co-processor busy signal to 80286.
CLK14	I	14.318MHz clock input used to derive TRMCLK, PCLK, PCLK (pins 20, 17, 18).
CLK16	I	16MHz clock input. This provides the low-speed CPU clock for 8MHz operation. When this pin is pulled high, ¼CLKHS (pin 1) is used.
CLK287	O	Clock for 80287 co-processor.
CLKHS	I	High-speed clock input (40MHz max). This provides the high-speed clock when selected. When CLK16(pin 84) is pulled high, this input (divided by 2) is used as low-speed clock.
CPURES	O	Reset to 80286.
CS287	I	80287 co-processor select decode (ports 0FxH).
D2, D3	I	Peripheral data bus bits 2 and 3.
D6, D7	IO	Peripheral data bus bits 6 and 7.
DACK2	I	DMA acknowledge bit 2. 16-bit DMA acknowledge from FE3010B.
DENO	O	Low byte data enable to data buffers.
DEN1	O	High byte data enable to data buffers.
DLYWR	IO	YIOW (pin 45) delayed to FE3010B, active edge delayed one PROCLK (pin 24). Input from FE3010B in during DMA to generate YIOW.
DMACLK	O	Software selectable clock for DMA to FE3010B.
DMAMR	I	DMA memory read from DMA controller.
DMARDY	O	End DMA cycle to FE3010B.
DTR	O	Data direction to data buffers.
EBHE	IO	High byte enable to expansion bus.
ERFSH	O	Enable refresh address signal to FE3010B. Puts refresh address on address bus.
ERROR	I	Error from 80287 co-processor.
HLDA	I	Hold acknowledge from 80286 for a request for the bus from DMA controller.
HLDA1	O	DMA hold acknowledge signal to FE3010B.
HOLDRQ	O	Hold request to 80286 for DMA or refresh.
HRQ1	I	Hold request from DMA controller in FE3010B.
INTA	O	Interrupt acknowledge to FE3010B.
IOCHCK	I	Error from PC/AT bus.
IOCHRDY	I	Current us cycle may complete. May be used to extend CPU, DMA, or refresh cycles.
IOCS16	I	16-bit I/O transfer on PC/AT bus.
IRQ13	O	Interrupt request 13 for 80287 error to FE3010B.
MASTER	I	Master on expansion bus has bus control.
MEMCS16	I	16-bit memory transfer on PC/AT bus.
M/IO	I	80286 memory or I/O select. High indicates memory cycle, low indicates I/O cycle.
NMI	O	Non-maskable interrupt to 80286. Generated in response to parity error or bus IOCHCK.
NMICS	I	NMI port enable decode (ports 7xH). Also used for programming bus control registers.
NPCS	O	80287 co-processor chip select (port 0F8H).
ONBRD	I	16-bit on board D-RAM memory or I/O device. Implies local memory on memory cycles and fast I/O bus timing for I/O cycles.
ONBRDL	O	ONBRD (pin 60) is latched with ALE (pin 25).
OUT1	I	Refresh timer input from FE3010B.
PBCS	I	Port B chip select decode (ports 61H, 63H).
PCLK	O	7.16MHz clock for keyboard controller.
PCLK	O	Inverted PCLK (pin 17).
PROCLK	O	Software selectable 80286 clock.
PTYERR	I	On board RAM parity error.
READY	O	Ready to 80286.
REFRESH	IO	Refresh cycle. Generated from timer channel 1 or externally from the bus.
RESCPU	I	80286 reset input from keyboard controller.
RESET	O	Rest to the system.
RESIN	I	System reset input.
RST287	O	Reset to 80287 co-processor (Write to I/O address 0F1H or system reset).
RTCALE	O	Real time clock address latch enable (port 70H).
S0, S1	I	80286 status lines 0 and 1.
SCYCLE	O	Latch low byte during byte swap read.
SDEN	O	Byte swap data enable to data buffers.
SDTR	O	Byte swap data direction to data buffers.
SYSCLK	O	System clock needed for bus timing.
TMRCLK	O	1.19MHz timer clock to FE3010B.
VDD1-3	-	Terminals of +5V supply.
VSS1-6	-	Terminals of ground.
YIOR	IO	I/O read. Input during HLDA cycle.
YIOW	IO	I/O write. Input during MASTER cycle.
YMEMR	IO	Memory read. Input during MASTER cycle.
YMEMW	IO	Memory write. Input during HLDA cycle.
ZEROWS	I	Zero wait state bus cycle.

FE3010B (FARADAY ELECTRONICS)

C-MOS AT PERIPHERAL CONTROL LOGIC (PLCC PACKAGE)
- TOP VIEW -





AEN O DMA Address Enable. Signal to indicate that current bus is a DMA cycle.

AH(n) O Address lines 10 to 23 or Address High lines 0 to 13.

AL(n) IO Address lines 0 to 9 or Address Low lines 0 to 9.

ALE I Address Latch Enable.

CLEAR I CLEAR of the FE3010B.

DACK n O DMA ACKnowledge bits 0 to 2.

DACKEN O DMA ACKnowledge ENable. Signal to enable DACK bits 0 to 2 decodes.

DATA(n) IO DATA bits 0 to 7.

DMARDY I DMA ReaDY. Signal to indicate that DMA may complete its current cycle.

DMACLK I DMA CLocK.

DRQ n I DMA ReQuests of channels 0 to 3 and 5 to 7.

HLDA I HoLD Acknowledge. Acknowledge from CPU for a request for bus from DMA controller.

HRQ O DMA Hold ReQuest to CPU.

INTA I INTerrupt Acknowledge from CPU.

INTR O INTerrupt Request to CPU.

IOR IO I/O Read command.

IOW IO I/O Write command.

IRQ n I Interrupt ReQuests 3 to 7, 9 to 13, 14, and 15.

IRQ n I Interrupt ReQuests 8 and 13.

KBINT I KeyBoard INTerrupt.

MASTER I MASTER of bus. Signal to indicate that a master on expansion bus has control of bus.

MEMR O MEMory Read command.

MEMW O MEMory Write command.

OUT1 O OUTput of timer channel 1.

RFSH I ReFreSH address. Signal to enable refresh address to address bus during a RAM refresh cycle.

RTCCS O Real Time Clock Chip Select.

SPKR O SPeaKeR.

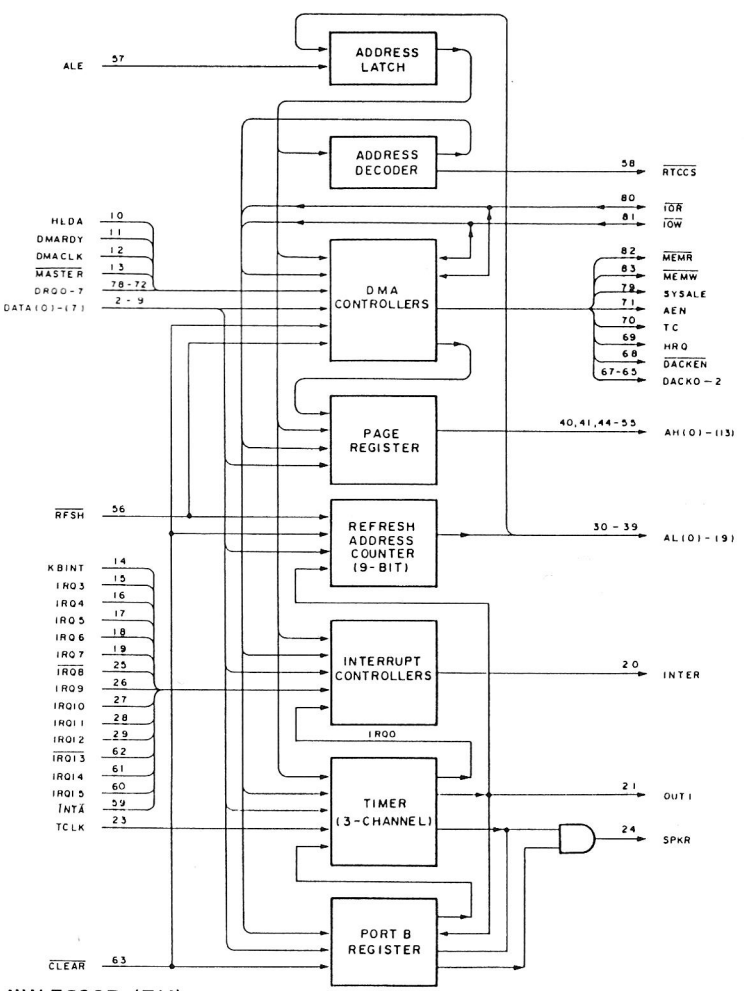
SYSALE O SYStem Address Latch Enable. Signal to latch address in address latch.

TC O Terminal Count, DMA end of operation. Signal to indicate DMA contrller has finished its cycle.

TCLK I Timer CLocK. Approx. 1.19MHz clock for timer.

VDD - +5V Supply.

VSS - Ground.



VIW-5600D (EK)

FE3010B FUNCTION TABLES

ADDRESS DECODER FUNCTION (0; Low, 1; High, X; Don't care)

Address lines										Decodes	Hex Addresses
9	8	7	6	5	4	3	2	1	0		
0	0	0	0	0	X	X	X	X	X	DMA Controller #1 (CH0-3)	000H-01FH
0	0	0	0	1	X	X	X	X	X	Interrupt Controller Master	020H-03FH
0	0	0	1	0	X	X	X	X	X	Timer	040H-05FH
0	0	0	1	1	0	X	X	X	1	Port B	060H-06FH,odd
0	0	0	1	1	1	X	X	X	1	Real Time Clock,(NRTCCS)	070H-07FH,odd
0	0	1	0	0	X	X	X	X	X	Pade register	080H-09FH
0	0	1	0	1	X	X	X	X	X	Interrupt Controller Slave	0A0H-0BFH
0	0	1	1	0	X	X	X	X	X	DMA Controller #2 (CH4-7)	0C0H-0DFH

DMA CONTROLLERs FUNCTION

AT Bus DMA Channel	DMA Controller	Transfer Type
#0	#1 Channel 0	8 bits
#1	#1 Channel 1	8 bits
#2	#1 Channel 2	8 bits
#3	#1 Channel 3	8 bits
#4	#2 Channel 0	Cascade #1
#5	#2 Channel 1	16 bits
#6	#2 Channel 2	16 bits
#7	#2 Channel 3	16 bits

PAGE REGISTER FUNCTION

I/O Address	Decode
087H	DMA Channel 0
083H	DMA Channel 1
081H	DMA Channel 2
082H	DMA Channel 3
08BH	DMA Channel 5
089H	DMA Channel 6
08AH	DMA Channel 7
08FH	Refresh

INTERRUPT CONTROLLERs FUNCTION

System interrupt	Interrupt Controller	Use
0	Master Level 0	Timer
1	Master Level 1	Keyboard
2	Master Level 2	Cascade Slave
3- 7	Master Levels 3 to 7	AT Bus
8	Slave Level 8	Real Time Clock
9-12	Slave Levels 9 to 12	AT Bus
13	Slave Level 13	Co-Processor
14,15	Slave Levels 14 and 15	AT Bus

TIMER FUNCTION

Timer Channel	Use
0	Time of Day(Interrupt)
1	Refresh Request
2	Speaker

DMA ACKNOWLEDGE FUNCTION

DACK Bits 2	1	0	DMA Channel Acknowledge
0	0	0	#0
0	0	1	#1
0	1	0	#2
0	1	1	#3
1	0	0	Illegal
1	0	1	#5
1	1	0	#6
1	1	1	#7

0; Low, 1; High

DMA CLOCK FUNCTION

System Clock	DMA Clock
6MHz	3 or 6MHz
8MHz	4 or 8MHz
10MHz	5MHz

PORT B FUNCTION

Bit	Function
0	Gate for Timer Channel 2
1	Enable Speaker
2	reserved
3	reserved
4	Toggles on each Refresh (R)
5	OUT2 from Timer Channel 2 (R)

(R); Read only

Notes:

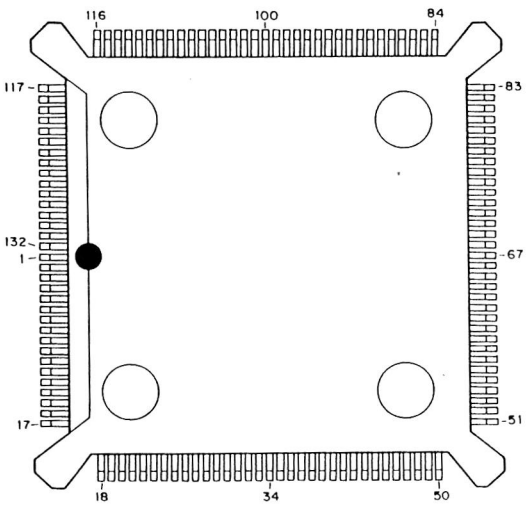
DMA Controller;
Refer to 8237.

Interrupt Controller;
Refer to 8259.

Timer; Refer to 8254.

FE3021 (FARADAY ELECTRONICS)

ADDRESS BUFFER AND MEMORY CONTROLLER
- TOP VIEW -

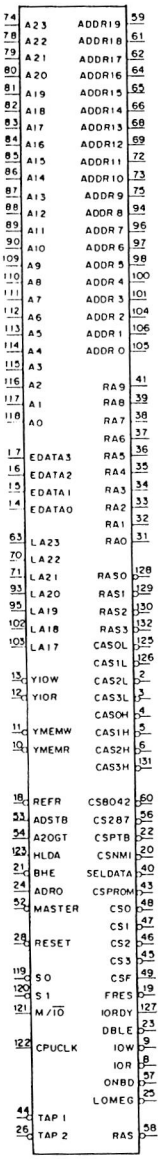


No.	SYMBOL	IO
1	VSS1	--
2	-CAS2L	O
3	-CAS3L	O
4	-CAS0H	O
5	-CAS1H	O
6	-CAS2H	O
7	VDD1	--
8	-IOR	IO
9	-IOW	IO
10	-YMEMR	I
11	-YMEMW	I
12	-YIOR	IO
13	-YIOW	IO
14	EDATA0	IO
15	EDATA1	IO
16	EDATA2	IO
17	EDATA3	IO
18	-REFR	I
19	-FRES	O
20	-CSNMI	O
21	-BHE	I
22	-CSPTB	O
23	-DBLE	O
24	ADR0	I
25	-LOMEG	O
26	-TAP2	I
27	VSS2	--
28	-RESET	I
29	VSS3	--
30	VDD2	--
31	RA0	O
32	RA1	O
33	RA2	O

No.	SYMBOL	IO
34	RA3	O
35	RA4	O
36	RA5	O
37	RA6	O
38	RA7	O
39	RA8	O
40	-SELDATA	O
41	RA9	O
42	VSS4	--
43	-CSPROM	O
44	-TAP1	I
45	-CS3	O
46	-CS2	O
47	-CS1	O
48	-CS0	O
49	CSF	O
50	VDD2	--
51	VSS5	--
52	-MASTER	I
53	ADSTB	I
54	A20GT	I
55	VDD3	--
56	-CS287	O
57	-ONBD	O
58	-RAS	O
59	ADDR19	IO
60	-CS8042	O
61	ADDR18	IO
62	ADDR17	IO
63	LA23	IO
64	ADDR16	IO
65	ADDR15	IO
66	ADDR14	IO

No.	SYMBOL	IO
67	VSS6	--
68	ADDR13	IO
69	ADDR12	IO
70	LA22	IO
71	LA21	IO
72	ADDR11	IO
73	ADDR10	IO
74	A23	IO
75	ADDR9	IO
76	VSS7	--
77	VDD4	IO
78	A22	IO
79	A21	IO
80	A20	IO
81	A19	IO
82	A18	IO
83	A17	IO
84	A16	IO
85	A15	IO
86	A14	IO
87	A13	IO
88	A12	IO
89	A11	IO
90	A10	IO
91	VSS8	--
92	VDD5	--
93	LA20	IO
94	ADDR8	IO
95	LA19	IO
96	ADDR7	IO
97	ADDR6	IO
98	ADDR5	IO
99	VSS9	--

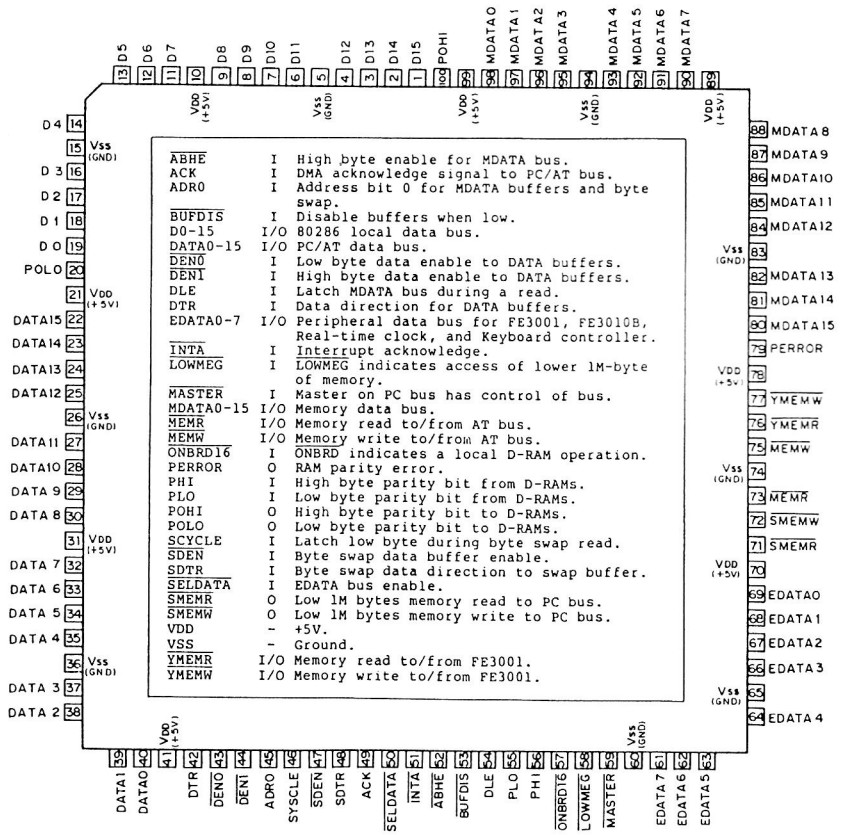
No.	SYMBOL	IO
100	ADDR4	IO
101	ADDR3	IO
102	LA18	IO
103	LA17	IO
104	ADDR2	IO
105	ADDR0	IO
106	ADDR1	IO
107	VDD6	--
108	VSS10	--
109	A9	IO
110	A8	IO
111	A7	IO
112	A6	IO
113	A5	IO
114	A4	IO
115	A3	IO
116	A2	IO
117	A1	IO
118	A0	IO
119	-S0	I
120	-S1	I
121	M/-IO	I
122	CPUCLK	I
123	HLDA	I
124	VSS11	--
125	-CAS0L	O
126	-CAS1L	O
127	IORDY	O
128	-RAS0	O
129	-RAS1	O
130	-RAS2	O
131	-CAS3H	O
132	-RAS3	O



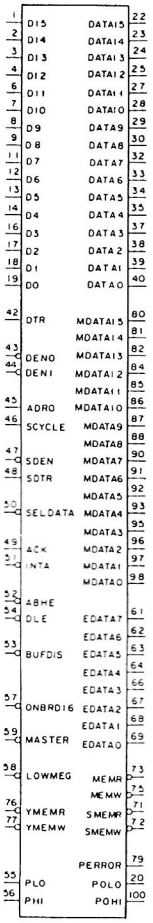
A0-23	; CPU Address lines 0 to 23.
A20GT	; Address 20 gate.
ADDR0-19	; AT bus address lines 0 to 19.
ADR0	; Low byte enable.
ADSTB	; Address strobe from FE3001.
-BHE	; Bus high enable.
-CASnL	; Column address signal for D-RAM bank n (n=0 to 3), low byte.
-CASnH	; Column address signal for D-RAM bank n (n=0 to 3), high byte.
CPUCLK	; CPU clock.
-CS0,1	; Programmable chip selects 0 and 1.
-CS2	; Programmable chip select 2 or Real-time clock chip select.
-CS287	; 80287 Co-processor chip select.
-CS3	; Programmable chip select 3 or Hard disk controller chip select.
-CS8042	; 8042 Keyboard controller chip select.
CSF	; FDC chip select or Operation or Config. register select.
-CSNMI	; NMI logic select.
-CSPROM	; BIOS P-ROM select.
-CSPTB	; Port B select.
-DBLE	; Data bus latch enable.
EDATA0-7	; Control register data bits 0 to 7.
-FRES	; Fast reset to CPU.
HLDA	; CPU hold acknowledge line.
-IOR	; System I/O read command signal, drives expansion bus. An input in Master mode.
IORDY	; Ready line, open drain. Directly connected to IOCHRDY bus line.
-IOW	; System I/O write command signal, drives expansion bus. An input in Master mode.
LA17-23	; AT bus large address lines 17 to 23.
-LOMEG	; Lower 1M-byte enable.
-MASTER	; Master on expansion bus has control of the bus.
M/-IO	; CPU memory or I/O select (memory cycle = high, I/O cycle = low).
-ONBD	; 16 bits on board D-RAM memory or I/O device.
RA0-9	; Memory address multiplexer output lines 0 to 9.
-RAS	; To RAS delay line input.
-RASn	; Raster address signal for D-RAM bank n (n=0 to 3).
-REFR	; Memory refresh signal.
-RESET	; Reset to the system.
-S0, -S1	; CPU status lines 0 and 1.
-SELDATA	; Direction of data transceiver data to EDATA bus.
-TAP1,2	; First and Second tap outputs of RAS delay lines.
VDD1-6	; +5V supply terminals.
VSS1-11	; Ground terminals.
-YIOR	; Ungated I/O read strobe from FE3001. An output in Master mode.
-YIOW	; Ungated I/O write strobe from FE3001. An output in Master mode.
-YMEMR	; Ungated system memory read command signal from FE3001.
-YMEMW	; Ungated system memory write command signal from FE3001.

FE3031 (FARADAY ELECTRONICS)

C-MOS AT DATA BUFFER (PLCC PACKAGE)
– TOP VIEW –



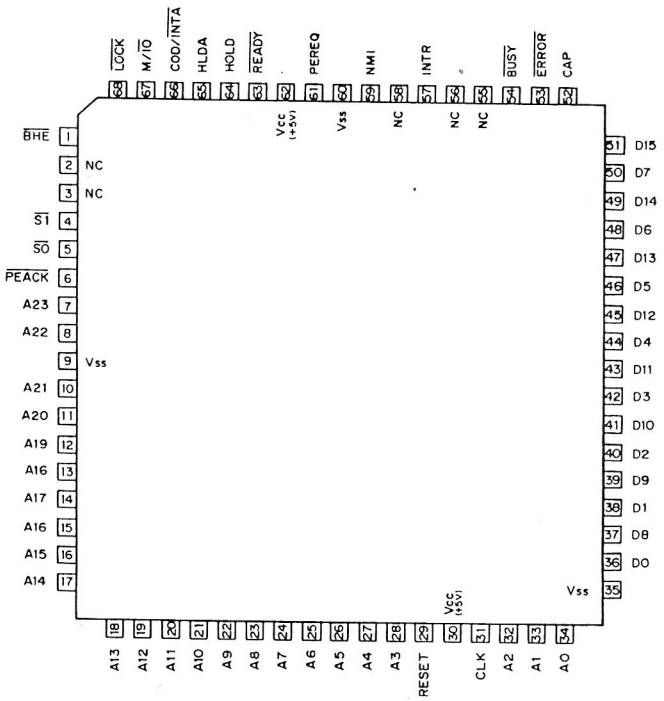
ABHE	I	High byte enable for MDATA bus.
ACK	I	DMA acknowledge signal to PC/AT bus.
ADR0	I	Address bit 0 for MDATA buffers and byte swap.
BUFDIS	I	Disable buffers when low.
D0-15	I/O	80286 local data bus.
DATA0-15	I/O	PC/AT data bus.
DEN0	I	Low byte data enable to DATA buffers.
DEN1	I	High byte data enable to DATA buffers.
DLE	I	Latch MDATA bus during a read.
DTR	I	Data direction for DATA buffers.
EDATA0-7	I/O	Peripheral data bus for FE3001, FE3010B, Real-time clock, and Keyboard controller.
INTA	I	Interrupt acknowledge.
LOWMEG	I	LOWMEG indicates access of lower 1M-byte of memory.
MASTER	I	Master on PC bus has control of bus.
MDATA0-15	I/O	Memory data bus.
MEMR	I/O	Memory read to/from AT bus.
MEMW	I/O	Memory write to/from AT bus.
ONBRD16	I	ONBRD indicates a local D-RAM operation.
PERROR	O	RAM parity error.
PHI	I	High byte parity bit from D-RAMs.
PLO	I	Low byte parity bit from D-RAMs.
POHI	O	High byte parity bit to D-RAMs.
POLO	O	Low byte parity bit to D-RAMs.
SCYCLE	I	Latch low byte during byte swap read.
SDEN	I	Byte swap data buffer enable.
SDTR	I	Byte swap data direction to swap buffer.
SELDATA	I	EDATA bus enable.
SMEMR	O	Low 1M bytes memory read to PC bus.
SMEMW	O	Low 1M bytes memory write to PC bus.
VDD	–	+5V.
VSS	–	Ground.
YMEMR	I/O	Memory read to/from FE3001.
YMEMW	I/O	Memory write to/from FE3001.

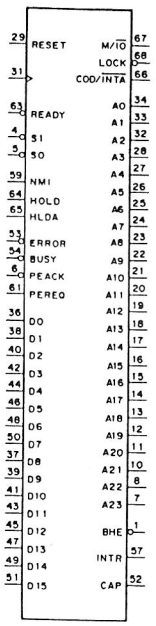


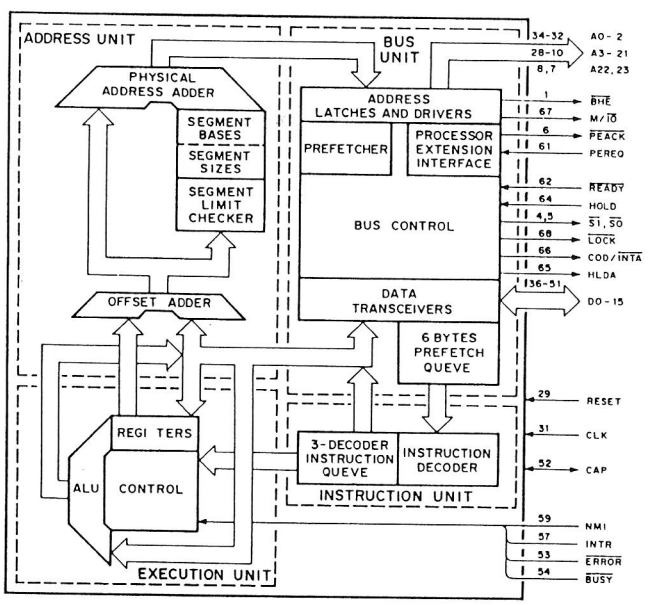
N80286-10 (INTEL) (CLOCK RATE = 10MHz)

16-BIT MICROPROCESSOR

– TOP VIEW –








```
A0-A23      (O)   ; ADDRESS LINES 0-23
BHE         (O)   ; BUS HIGH ENABLE
BUSY        (I)   ; PROCESSOR EXTENSION BUSY
CAP         (I)   ; SUBSTRATE FILTER CAPACITOR
CLK         (I)   ; SYSTEM CLOCK
COD/INTA    (O)   ; CODE/INTERRUPT ACKNOWLEDGE
D0-D15    (I/O)   ; DATA LINES 0-15
ERROR       (I)   ; PROCESSOR EXTENSION ERROR
HLDA        (O)   ; BUS HOLD ACKNOWLEDGE
HOLD        (I)   ; BUS HOLD REQUEST
INTR        (I)   ; INTERRUPT REQUEST
LOCK        (O)   ; BUS LOCK
M/IO        (O)   ; MEMORY or I/O SELECT
NMI         (I)   ; NON-MASKABLE INTERRUPT REQUEST
PEACK       (O)   ; PROCESSOR EXTENSION OPERAND ACKNOWLEDGE
PEREQ       (I)   ; PROCESSOR EXTENSION OPERAND REQUEST
READY       (I)   ; BUS READY
RESET       (I)   ; SYSTEM RESET
S0,S1       (O)   ; BUS CYCLE STATUS
```

BHE and A0 ENCODINGS		
BHE VALUE	A0 VALUE	FUNCTION
0	0	WORD TRANSFER
0	1	BYTE TRANSFER ON UPPER HALF OF DATA BUS(D8-D15)
1	0	BYTE TRANSFER ON UPPER HALF OF DATA BUS(D0-D7)
1	1	WILL NEVER OCCUR

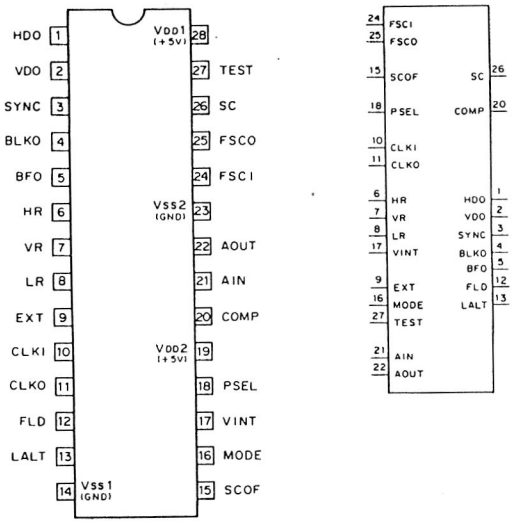
80286 BUS CYCLE STATUS DEFINITION				
COD/INTA	M/IO	S1	S0	BUS CYCLE INITISTED
0	0	0	0	INTERRUPT ACKNOWLEDGE
0	0	0	1	WILL NOT OCCUR
0	0	1	0	WILL NOT OCCUR
0	0	1	1	NONE ; NOT A STATUS CYCLE
0	1	0	0	IF A1="1" THEN HALF ; ELSE SHUTDOWN
0	1	0	1	MEMORY DATA READ
0	1	1	0	MEMORY DATA WRITE
0	1	1	1	NONE ; NOT A STATUS CYCLE
1	0	0	0	WILL NOT OCCUR
1	0	0	1	I/O READ
1	0	1	0	I/O WRITE
1	0	1	1	NONE ; NOT A STATUS CYCLE
1	1	0	0	WILL NOT OCCUR
1	1	0	1	MEMORY INSTRUCTION READ
1	1	1	0	WILL NOT OCCUR
1	1	1	1	NONE ; NOT A STATUS CYCLE

0 ; LOW LEVEL
1 ; HIGH LEVEL

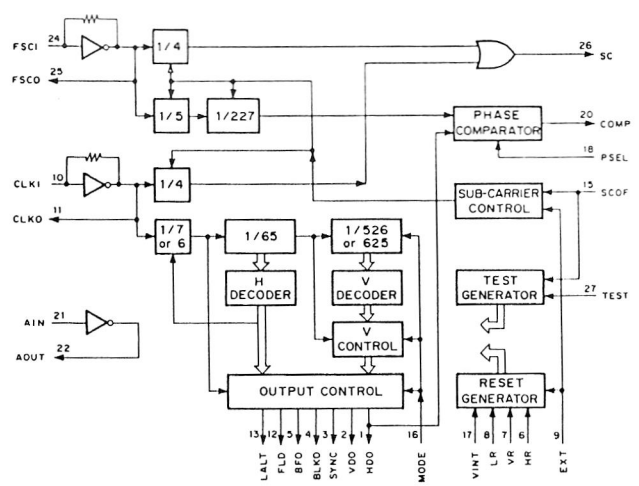
CXD1030M (SONY) FLAT PACKAGE

C-MOS SYNCHRONOUS SIGNAL GENERATOR

– TOP VIEW –



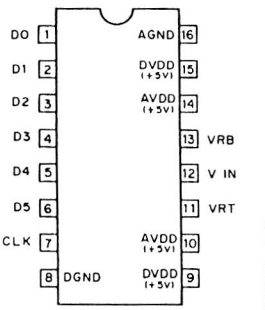
PIN No.	SYMBOL NAME	ABBREVATION
1	HDO	HORIZONTAL DRIVE PULSE OUTPUT
2	VDO	VARTICAL DRIVE PULSE OUTPUT
3	SYNC	COMPOSITE SYNCHRONOUS PULSE OUTPUT
4	BLKO	COMPOSITE BLANKING PULSE OUTPUT
5	BFO	BURST FLAG PULSE OUTPUT
6	HR	H RESET INPUT
7	VR	V RESET INPUT
8	LR	LINE ALTERNATE RESET INPUT
9	EXT	INTERNAL/EXTERNAL MODE SELECT
10	CLKI	CLOCK INPUT (NTSC:14.31818MHz, PAL:14.1875MHz)
11	CLKO	CLOCK OUTPUT
12	FLD	FIELD PULSE OUTPUT
13	VSS1	GND
14	LALT	LINE ALTERNATE PULSE OUTPUT
15	SCOF	SUB-CARRIER OFF INPUT (ON/OFF)
16	MODE	NTSC/PAL MODE SELECT
17	VINT	INITIALRISE INPUT
18	PSEL	PHASE COMPARATE POLARITY SELECT
19	VDD2	+5V of INVERTER for FILTER
20	COMP	OUTPUT of PHASE COMPARATOR
21	AIN	INPUT of INVERTER for FILTER
22	AOUT	OUTPUT of INVERTER for FILTER
23	VSS2	GND of INVERTER for FILTER
24	FSCI	4fsc CLOCK INPUT
25	FSCO	4fsc CLOCK OUTPUT
26	SC	SUB-CRRIER OUTPUT
27	TEST	TEST INPUT (NORMALLY LOW LEVEL)
28	VDD1	+5V

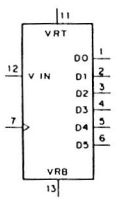


CXD1172M (SONY) FLAT PACKAGE

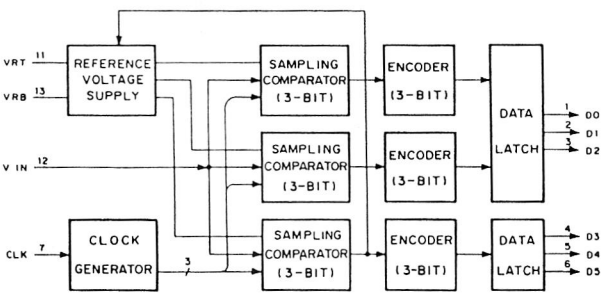
6 BITS 20 MSPS VIDEO A/D CONVERTER

– TOP VIEW –





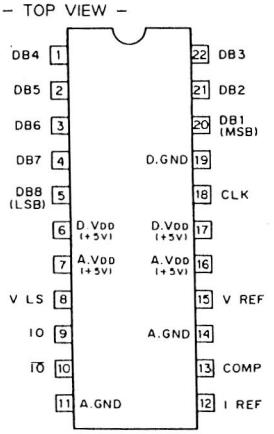
AGND; ANALOG GROUND
AVDD; ANALOG POWER SUPPLY
CLK; CLOCK INPUT
D0-5; DIGITAL DATA OUTPUTS (LSB to MSB)
DGND; DIGITAL GROUND
DVDD; DIGITAL POWER SUPPLY
V IN; ANALOG VOLTAGE INPUT
VRB; BOTTOM REFERENCE VOLTAGE INPUT
VRT; TOP REFERENCE VOLTAGE INPUT

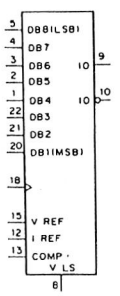


uPD6902C (NEC)

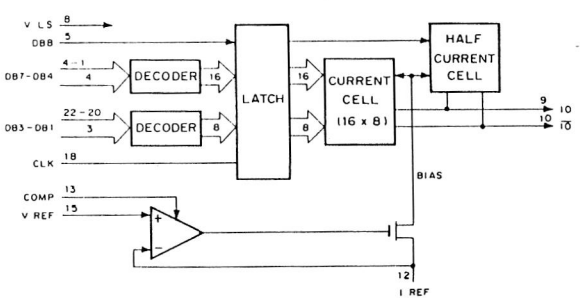
C-MOS 8-BIT D/A CONVERTER

– TOP VIEW –





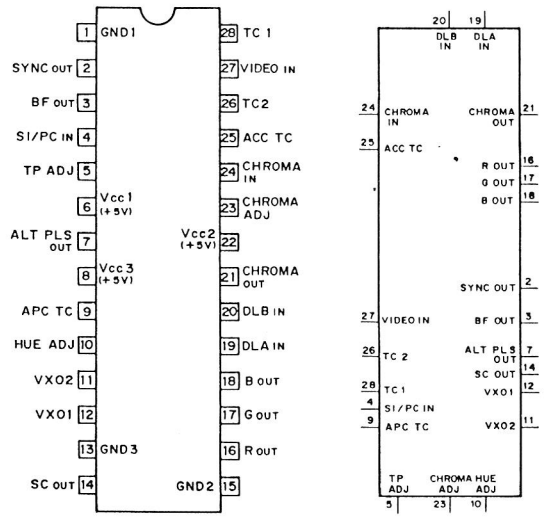
A.GND; ANALOG GROUND
A.VDD; ANALOG POWER SUPPLY
COMP; PHASE COMPENSATION
CLK; CLOCK INPUT
DB1-8; DIGITAL DATA INPUTS (MSB to LSB)
D.GND; DIGITAL GROUND
D.VDD; DIGITAL POWER SUPPLY
IO; ANALOG CURRENT OUTPUT
I REF; FULL SCALE CURRENT
V LS; VOLTAGE LEVEL SELECT (C-MOS/TTL)
V REF; REFERENCE VOLTAGE

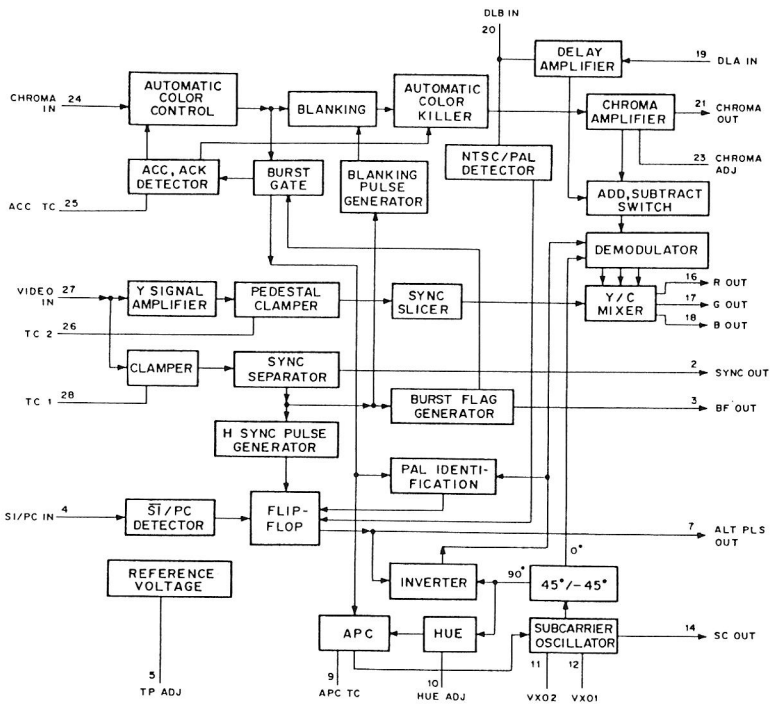


V7020 (SONY)

NTSC/PAL DECODER

– TOP VIEW –



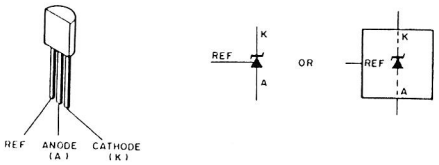


FUNCTION TABLE

PIN No.	SYMBOLIC NAME	DESCRIPTION
1	GND1	GROUND FOR Y SIGNAL AMPLIFIER AND SYNCHRONIZING SIGNAL SEPARATOR
2	SYNC OUT	SYNCHRONIZING SIGNAL OUTPUT (TTL LEVEL)
3	BF OUT	BURST FLAG OUTPUT (TTL LEVEL)
4	SI/PC IN	SUPERIMPOSE OR PERSONAL COMPUTER SELECTION SIGNAL INPUT SI MODE:LOW, PC MODE:HIGH
5	TP ADJ	BURST FLAG POSITION ADJUSTMENT
6	Vcc1	Vcc FOR Y SIGNAL AMPLIFIER AND SYNCHRONIZING SIGNAL SEPARATOR
7	ALT PLS OUT	LINE ALTERNATION PULSE OUTPUT NTSC MODE:LOW PAL MODE:LINE ALTERNATION PULSE
8	Vcc3	Vcc FOR APC, HUE, AND VXO STAGES
9	APC TC	AUTOMATIC PHASE CONTROL TIME CONSTANT
10	HUE ADJ	HUE ADJUSTMENT
11	VXO2	CRYSTAL OSCILLATOR
12	VXO1	
13	GND3	GROUND FOR APC, HUE, AND VXO STAGES
14	SC OUT	SUBCARRIER SIGNAL OUTPUT
15	GND2	GROUND FOR DEMODULATOR AND Y/C MIXER
16	R OUT	RED SIGNAL OUTPUT
17	G OUT	GREEN SIGNAL OUTPUT
18	B OUT	BLUE SIGNAL OUTPUT
19	DLA IN	DELAY AMPLIFIER INPUT
20	DLB IN	MODE SELECTION AND DELAY AMPLIFIER GAIN BIAS NTSC MODE: V20 ≦ 0.8V PAL MODE: 2.0V ≦ V20 ≦ 2.8V V20 IS THE VOLTAGE MUST BE APPLIED
21	CHROMA OUT	CHROMA SIGNAL OUTPUT
22	Vcc2	Vcc FOR DEMODULATOR AND Y/C MIXER
23	CHROMA ADJ	MODE SELECTION AND CHROMA AMPLIFIER GAIN ADJUSTMENT BLACK/WHITE MODE: V23 ≦ 0.8V COLOR MODE: 2.0V ≦ V23 ≦ 3.0V V23 IS THE VOLTAGE MUST BE APPLIED
24	CHROMA IN	CHROMA SIGNAL INPUT
25	ACC TC	AUTOMATIC COLOR CONTROL TIME CONSTANT
26	TC2	TIME CONSTANT FOR PEDESTAL CLAMPER
27	VIDEO IN	VIDEO SIGNAL INPUT
28	TC1	TIME CONSTANT FOR SYNCHRONIZING SIGNAL SEPARATOR

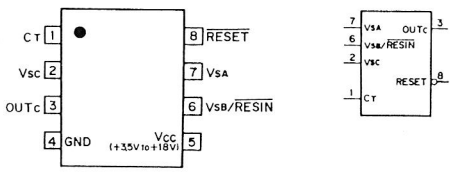
AN1431T (MATSUSHITA)

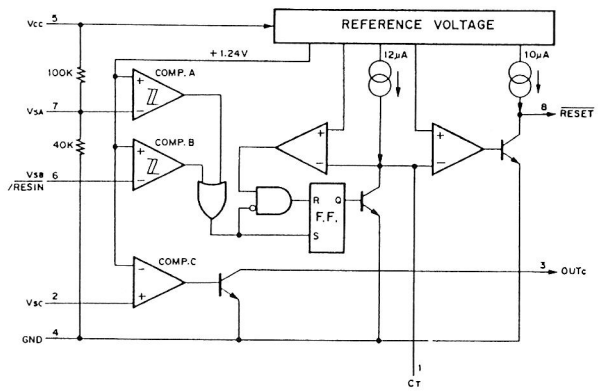
ADJUSTABLE PRECISION SHUNT REGULATOR



MB3771DIP (FUJITSU)

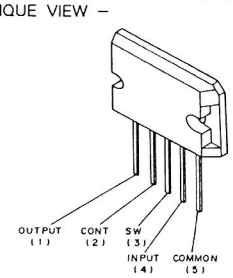
2-WAY SUPPLY VOLTAGE SUPERVISOR
– TOP VIEW –



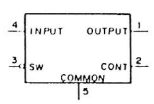


STR9012 (SANKEN)

POSITIVE VOLTAGE REGULATOR (4A)
– OBLIQUE VIEW –



OUTPUT VOLTAGE	??
5 V	05
12 V	12



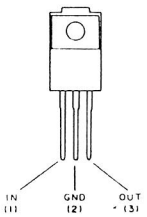
CONT ; OUTPUT CONTROL
SW ; OUTPUT SWITCHING

SW	OUTPUT
0	ON
1	OFF

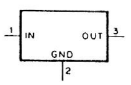
0 ; MAX 0.6V
1 ; MIN 2V

M5F7805 (MITSUBISHI)

POSITIVE VOLTAGE REGULATOR (1A)
– PRINTED SIDE VIEW –

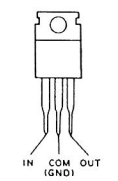


+ 5V	M5F7805
+ 6V	M5F7806
+ 7V	M5F7807
+ 8V	M5F7808
+ 9V	M5F7809
+ 10V	M5F7810
+ 12V	M5F7812
+ 15V	M5F7815
+ 18V	M5F7818
+ 20V	M5F7820
+ 24V	M5F7824



NJM7805A (JRC)

POSITIVE VOLTAGE REGULATOR (1A)
– SIDE VIEW –

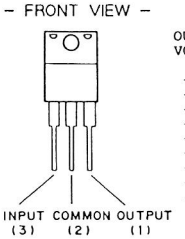


OUTPUT VOLTAGE	AN78??	FS78??	HA178??P	L78??	NJM78??B	NJM78??A/K
+5V	AN7805	FS7805	HA17805P	L7805	--------	NJM7805A/K
+6V	AN7806	------	HA17806P	-----	--------	NJM7806A/K
+7V	AN7807	------	HA17807P	L7807	--------	----------
+8V	AN7808	------	HA17808P	-----	--------	NJM7808A/K
+8.5V	------	------	--------	-----	--------	----------
+9V	AN7809	------	--------	-----	--------	NJM7809A/K
+10V	AN7810	------	--------	-----	--------	----------
+12V	AN7812	FS7812	HA17812P	-----	NJM7812B	NJM7812A/K
+15V	AN7815	FS7815	HA17815P	-----	--------	NJM7815A/K
+18V	AN7818	------	HA17818P	-----	--------	NJM7818A/K
+20V	AN7820	------	--------	-----	--------	NJM7820A/K
+24V	AN7824	FS7824	HA17824P	-----	--------	NJM7824A/K

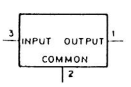
OUTPUT VOLTAGE	uA787?UC	uPC143??H	uPC787?H	TA787??P/AP
+5V	uA7805UC	uPC14305H	uPC7805H	TA78005P/AP
+6V	uA7806UC	---------	--------	TA78006P/AP
+7V	--------	---------	--------	---------
+8V	uA7808UC	uPC14308H	uPC7808H	TA78008P/AP
+8.5V	uA7885UC	---------	--------	---------
+9V	--------	---------	--------	TA78009P/AP
+10V	--------	---------	--------	TA78010P/AP
+12V	uA7812UC	uPC14312H	uPC7812H	TA78012P/AP
+15V	uA7815UC	uPC14315H	uPC7815H	TA78015P/AP
+18V	uA7818UC	uPC14318H	uPC7818H	TA78018P/AP
+20V	--------	---------	--------	TA78020P/AP
+24V	uA7824UC	uPC14324H	uPC7824H	TA78024P/AP

RC7805FA (RAYTHEON)

POSITIVE VOLTAGE REGULATOR
– FRONT VIEW –

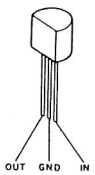


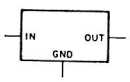
OUTPUT VOLTAGE	NJM78M??FA	NJM787?FA	RC78M??FA	RC787?FA
+5V	NJM78M05FA	NJM7805FA	RC78M05FA	RC7805FA
+6V	NJM78M06FA	NJM7806FA	RC78M06FA	RC7806FA
+8V	NJM78M08FA	NJM7808FA	---------	RC7808FA
+9V	NJM78M09FA	NJM7809FA	RC78M09FA	RC7809FA
+12V	NJM78M12FA	NJM7812FA	RC78M12FA	RC7812FA
+15V	NJM78M15FA	NJM7815FA	RC78M15FA	RC7815FA
+18V	NJM78M18FA	NJM7818FA	---------	RC7818FA
+20V	NJM78M20FA	NJM7820FA	---------	RC7820FA
+24V	NJM78M24FA	NJM7824FA	---------	RC7824FA



NJM78L05A (JRC)
NJM78L09A (JRC)
RC78L05A (RAYTHEON)
RC78L09A (RAYTHEON)

POSITIVE VOLTAGE REGULATOR (100mA)

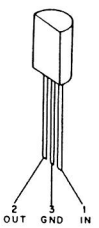


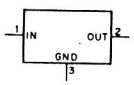


OUTPUT VOLTAGE	NJM78L??A	RC78L??A	uA78L??ACL	uA78L??AWV	uPC78L??J	AN78L??
+2.6V	NJM78L02A	RC78L02A	uA78L02ACL	uA78L26AWV	---------	-------
+4V	---------	--------	----------	----------	---------	AN78L04
+5V	NJM78L05A	RC78L05A	uA78L05ACL	uA78L05AWV	uPC78L05J	AN78L05
+6V	NJM78L06A	RC78L06A	----------	----------	---------	AN78L06
+6.2V	---------	--------	uA78L06ACL	uA78L62AWV	---------	-------
+7V	---------	--------	----------	----------	---------	AN78L07
+8V	NJM78L08A	RC78L08A	uA78L08ACL	----------	uPC78L08J	AN78L08
+8.2V	---------	--------	----------	uA78L82AWV	---------	-------
+9V	NJM78L09A	RC78L09A	uA78L09ACL	uA78L09AWV	---------	AN78L09
+10V	---------	--------	uA78L10ACL	----------	uPC78L10J	AN78L10
+12V	NJM78L12A	RC78L12A	uA78L12ACL	uA78L12AWV	uPC78L12J	AN78L12
+15V	NJM78L15A	RC78L15A	uA78L15ACL	uA78L15AWV	uPC78L15J	AN78L15
+18V	NJM78L18A	RC78L18A	----------	uA78L18AWV	---------	AN78L18
+20V	NJM78L20A	RC78L20A	----------	----------	---------	AN78L20
+24V	NJM78L24A	RC78L24A	----------	uA78L24AWV	---------	AN78L24

TA78L009AP (TOSHIBA)

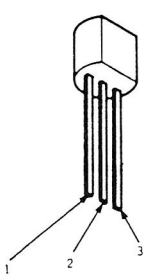
POSITIVE VOLTAGE REGULATOR (150mA)





OUTPUT VOLTAGE	???
+5V	005
+6V	006
+7V	007
+7.5V	075
+8V	008
+9V	009
+10V	010
+12V	012
+13.2V	132
+15V	015
+18V	018
+20V	020
+24V	024

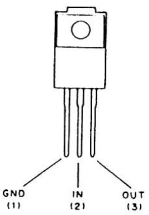
RC79L09A



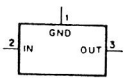
1 Ground
2 Input
3 Output

M5F79M05 (MITSUBISHI)
M5F79M12 (MITSUBISHI)

NEGATIVE VOLTAGE REGULATOR (500mA)
– PRINTED SIDE VIEW –

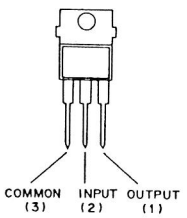


– 5V	M5F79M05
– 6V	M5F79M06
– 7V	M5F79M07
– 8V	M5F79M08
– 9V	M5F79M09
– 10V	M5F79M10
– 12V	M5F79M12
– 15V	M5F79M15
– 18V	M5F79M18
– 20V	M5F79M20
– 24V	M5F79M24

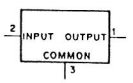


NJM79M12A (JRC)

NEGATIVE VOLTAGE REGULATOR (500mA)
– FRONT VIEW –

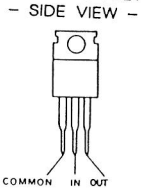


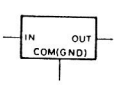
–5V	NJM79M05A
–6V	NJM79M06A
–8V	NJM79M08A
–9V	NJM79M09A
–12V	NJM79M12A
–15V	NJM79M15A
–18V	NJM79M18A
–24V	NJM79M24A



uPC79M05H (NEC)
uPC79M12H (NEC)

NEGATIVE VOLTAGE REGULATOR (0.5A)
– SIDE VIEW –

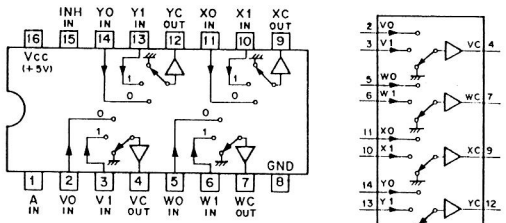


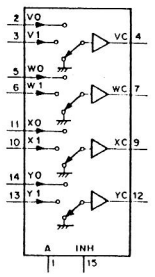


OUTPUT VOLTAGE	uA79M??AUC	FS79??M	AN79M??	uPC79M??H
-5V	uA79M05AUC	FS7905M	AN79M05	uPC79M05H
-6V	uA79M06AUC	-------	AN79M06	---------
-7V	----------	-------	AN79M07	---------
-8V	uA79M08AUC	-------	AN79M08	uPC79M08H
-9V	----------	-------	AN79M09	---------
-10V	----------	-------	AN79M10	---------
-12V	uA79M12AUC	FS7912M	AN79M12	uPC79M12H
-15V	uA79M15AUC	FS7915M	AN79M15	uPC79M15H
-18V	----------	-------	AN79M18	uPC79M18H
-20V	uA79M20AUC	-------	AN79M20	---------
-24V	uA79M24AUC	FS7924M	AN79M24	uPC79M24H

74F157APC (FSC)
MC74F157AN (MOTOROLA)

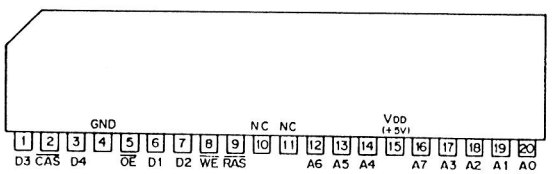
TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
– TOP VIEW –

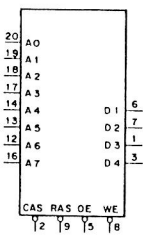




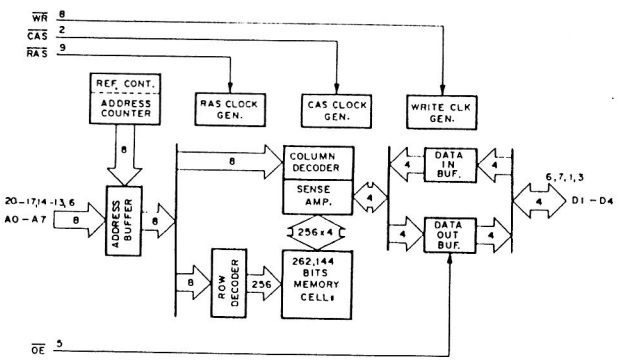
	CONT. IN		ON
	INH	A	CHANNEL
0 ; LOW LEVEL	0	0	0
1 ; HIGH LEVEL	0	1	1
X ; DON'T CARE	1	X	GND

MB81464-10PSZ (FUJITSU) (ACCESS TIME = 100nS)
N-MOS 262,144-BIT (65,536x4) DYNAMIC RAM
– SIDE VIEW –



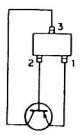


A0–A7 ; ADDRESS INPUT
$\overline{CAS}$; COLUMN ADDRESS STROBE
D1–D4 ; DATA IN/OUT
$\overline{OE}$; OUTPUT ENABLE
$\overline{RAS}$; ROW ADDRESS STROBE
$\overline{WE}$; WRITE ENABLE



< 2SA >

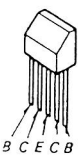
TOP VIEW (SCALE 4/1)



2SA1162
2SA812
FN1A4P-M34

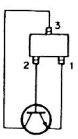
< 2SC >

2SC458C



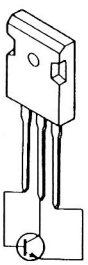
2SC1583

TOP VIEW (SCALE 4/1)



2SC1623
2SC2411K-CQ
2SD1030
FN1A4P-L34
FN1A4Z-M68

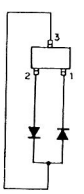
2SC2655



2SC4237

< OTHER >

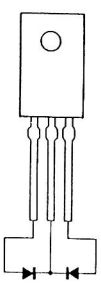
TOP VIEW (SCALE 4/1)



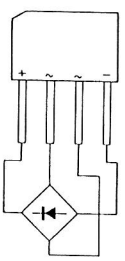
1SS123
1SS226

TOP VIEW (SCALE 4/1)

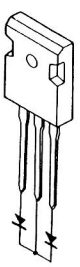
1SS223



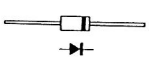
D10LCA20



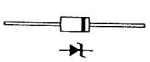
D3SB60



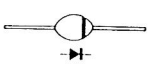
S15SC4M



1S2075K
1SS120
1SS135E
1SS168
D1NL20
ERC38- ? ?



HZ ? ?A ?
HZ ? ?B ?
HZ ? ?C ?
RD ? ?ESB ?

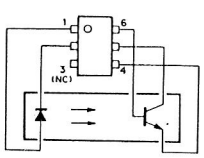


DFG1A8
V19 ?

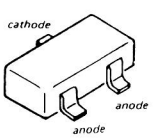
1T33C-01

N13T1

TOP VIEW (SCALE 2/1)

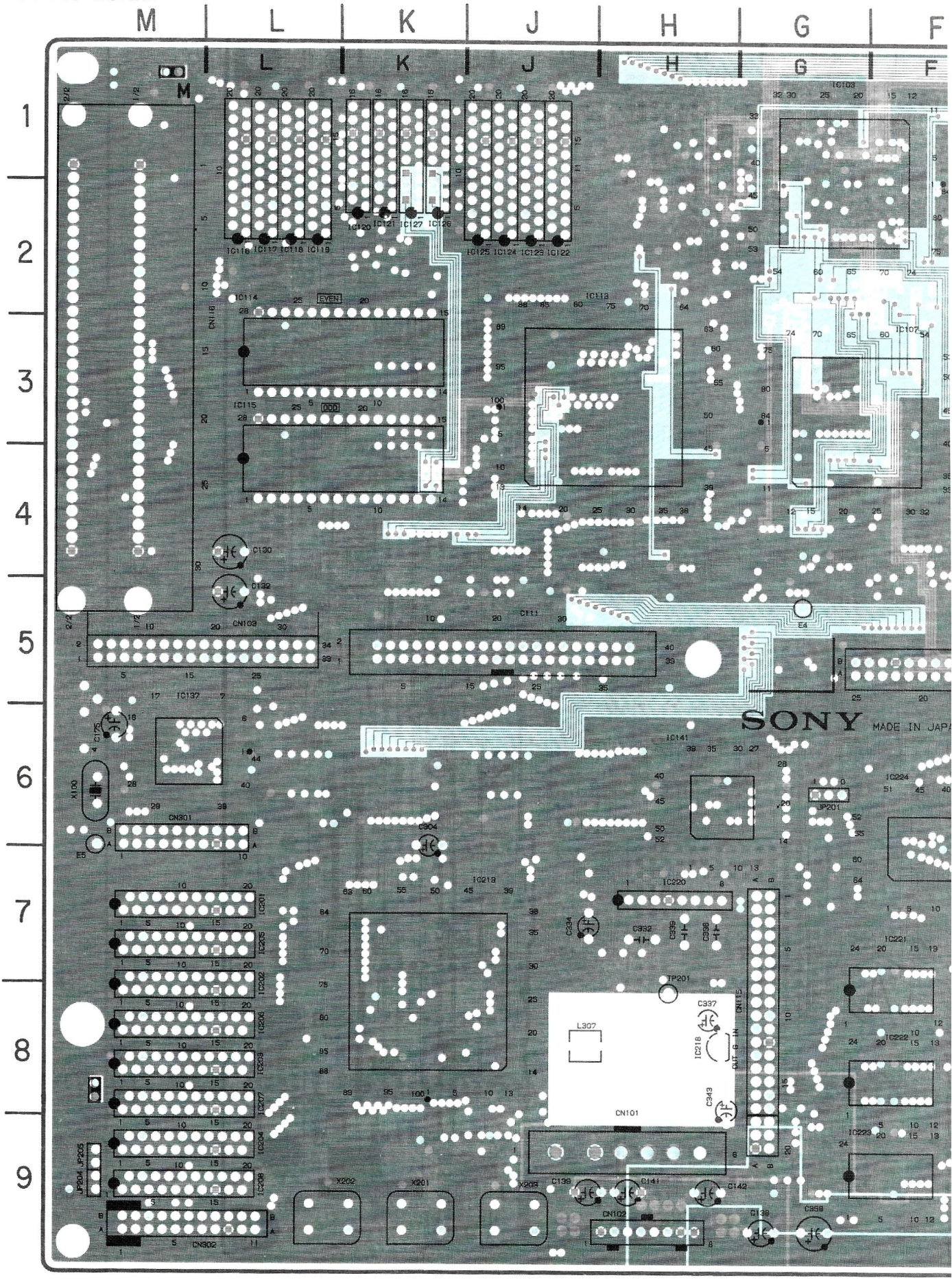


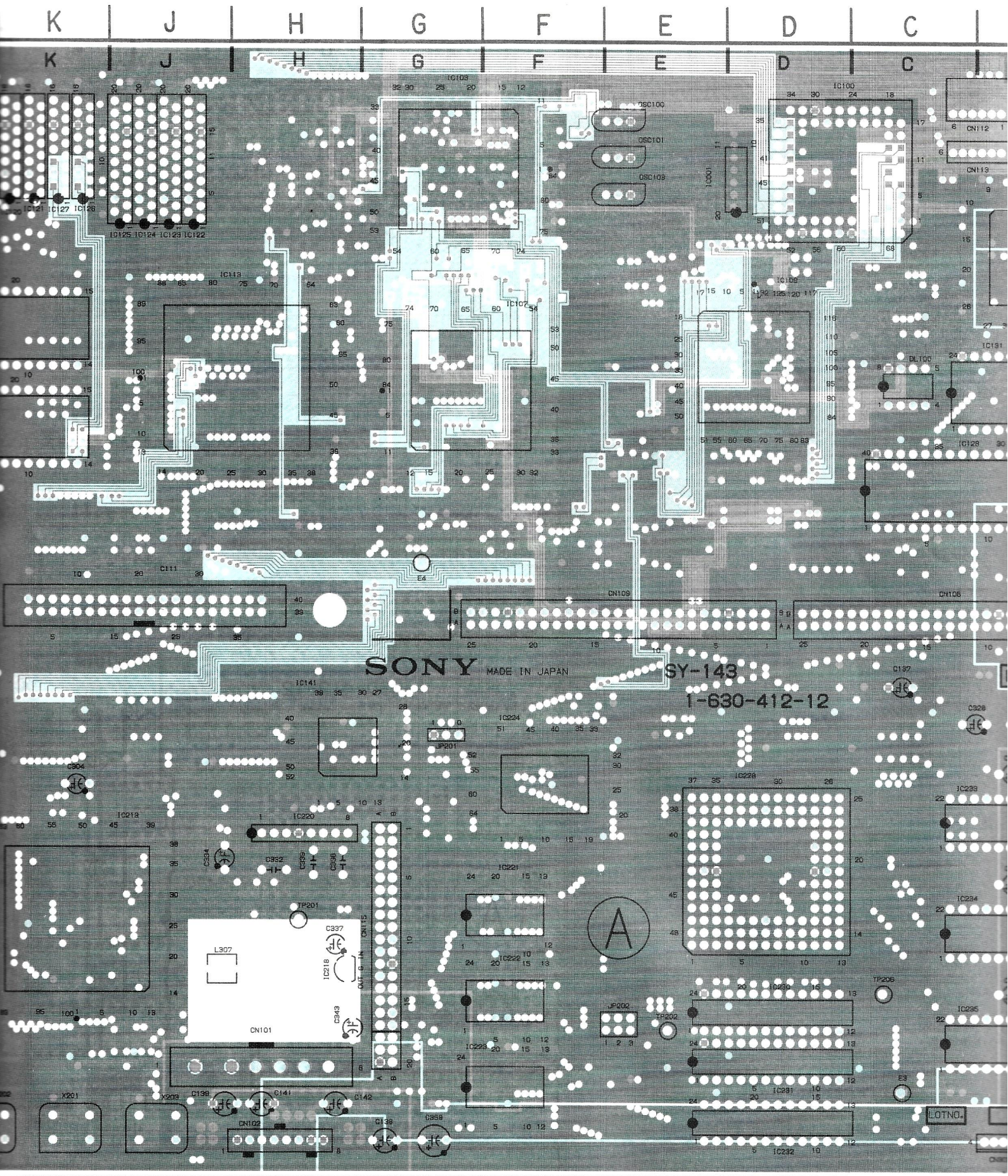
PC111S

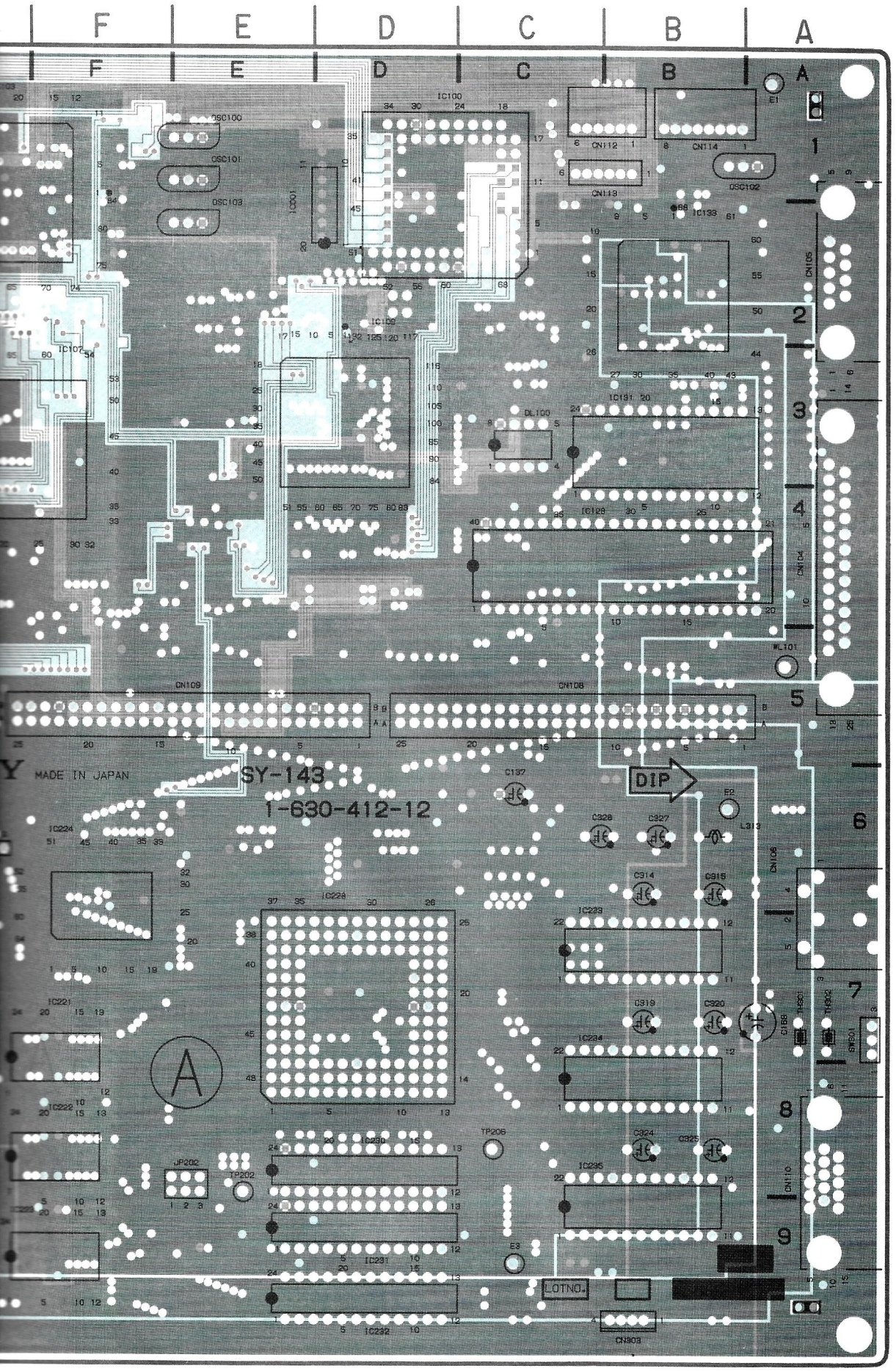


MA152WK

5-2. SY-143 BOARD

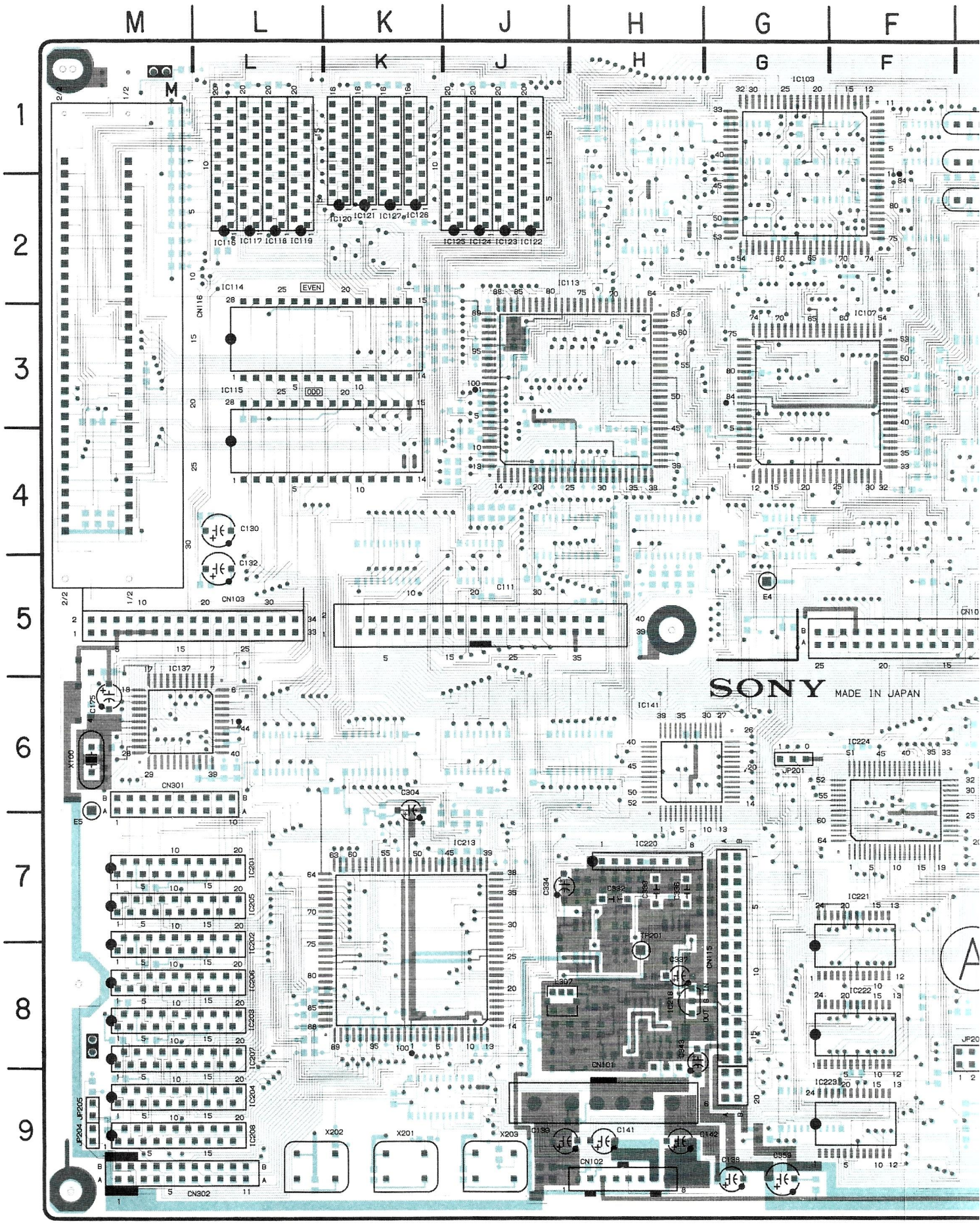


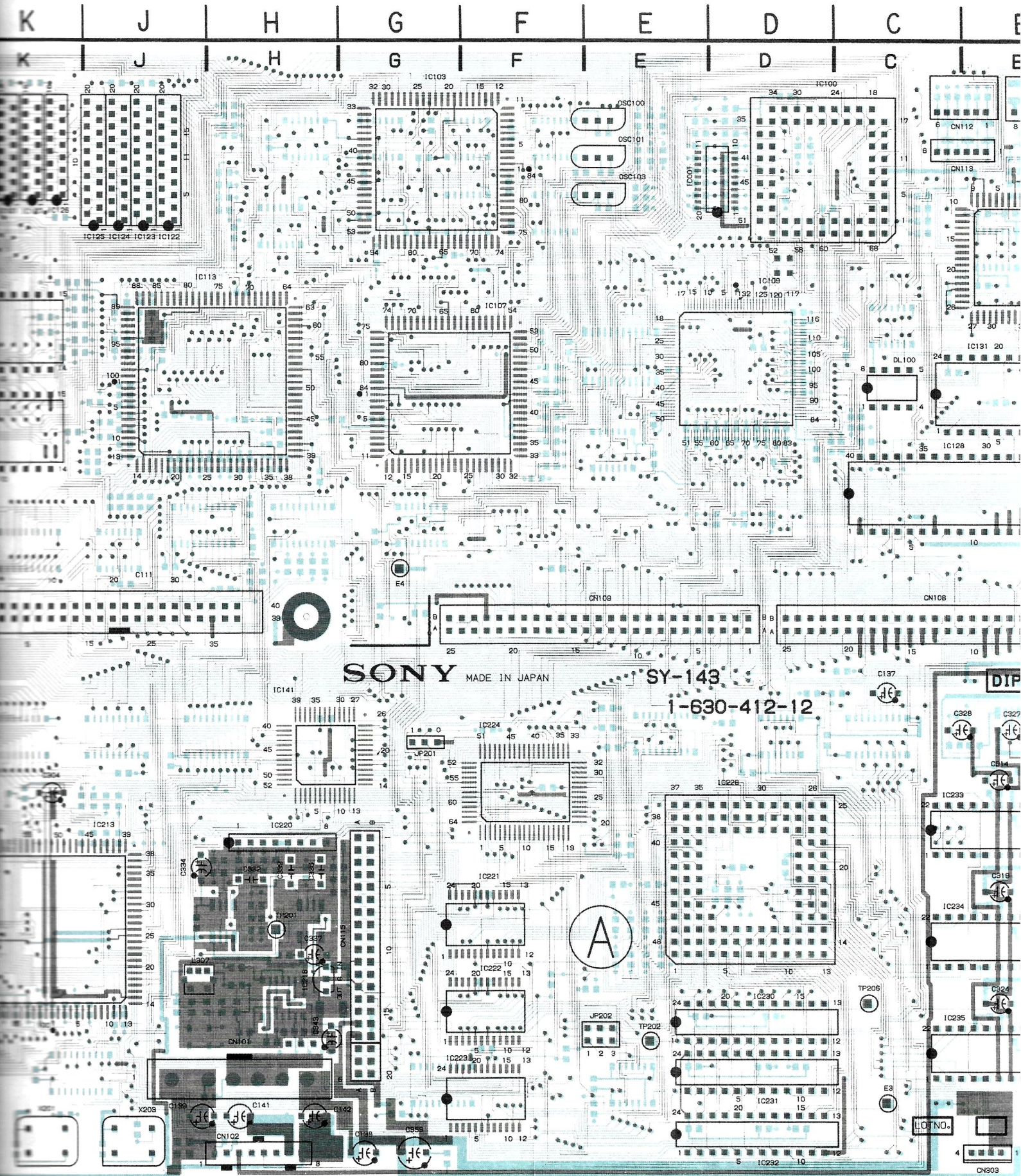

K
J
H
G
F
E
D
C
SONY MADE IN JAPAN
SY-143
1-630-412-12
A
LOT NO.

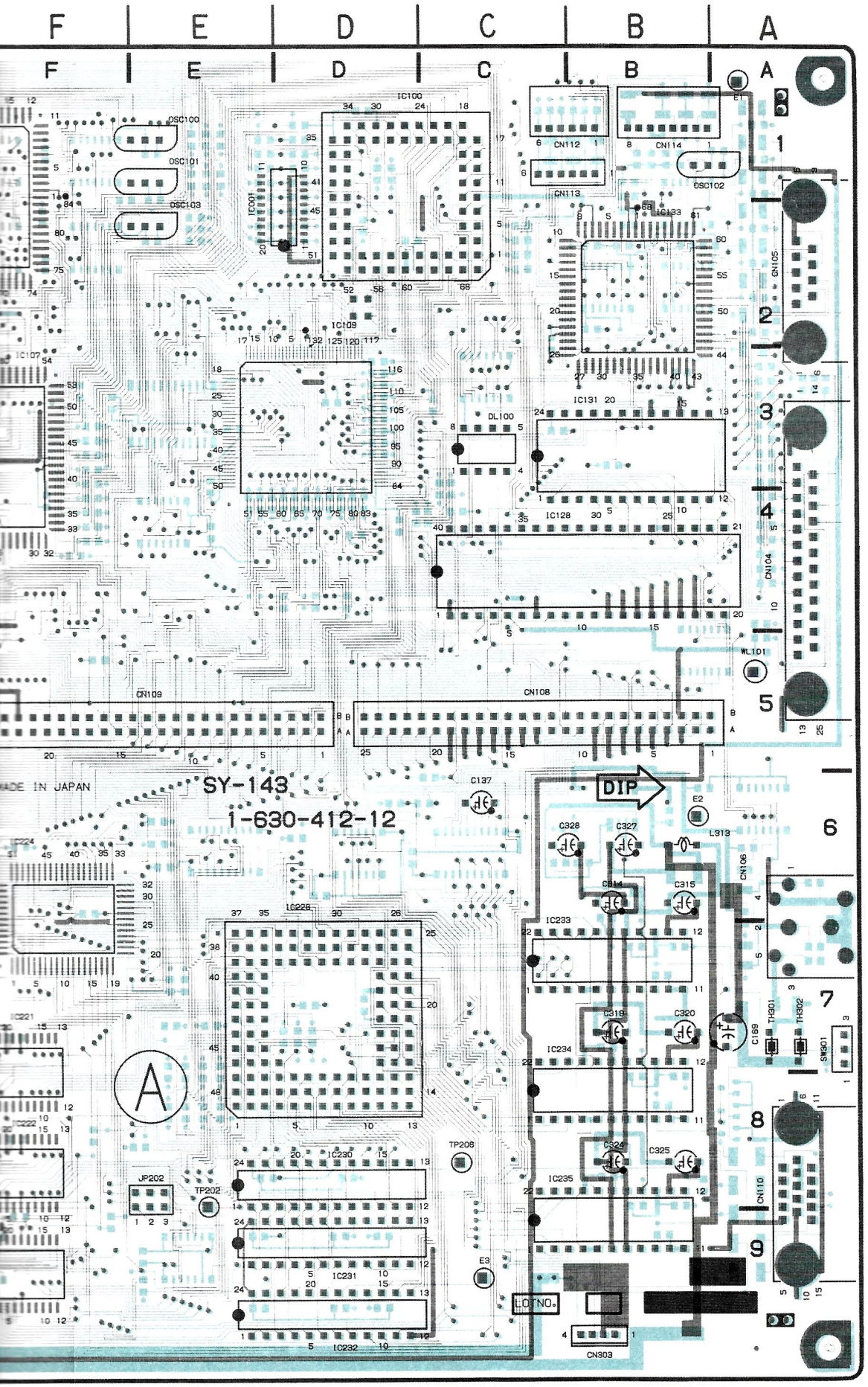


SY-143 – COMPONENT SIDE –

1-630-412-12
VIW-5600D(EK)


SONY MADE IN JAPAN
IC103
IC107
IC113
IC114
IC115
EVEN
ODD
IC116 IC117 IC118 IC119
IC120 IC121 IC127 IC126
IC125 IC124 IC123 IC122
IC137
IC141
IC213
IC220
IC221
IC222
IC223
IC224
CN103
CN116
CN301
CN302
CN101
CN102
JP201
JP204 JP205
X100
X201
X202
X203
C130
C132
C111
C304
C334
C335
C336
C138
C139
C141
C142
E4
E5

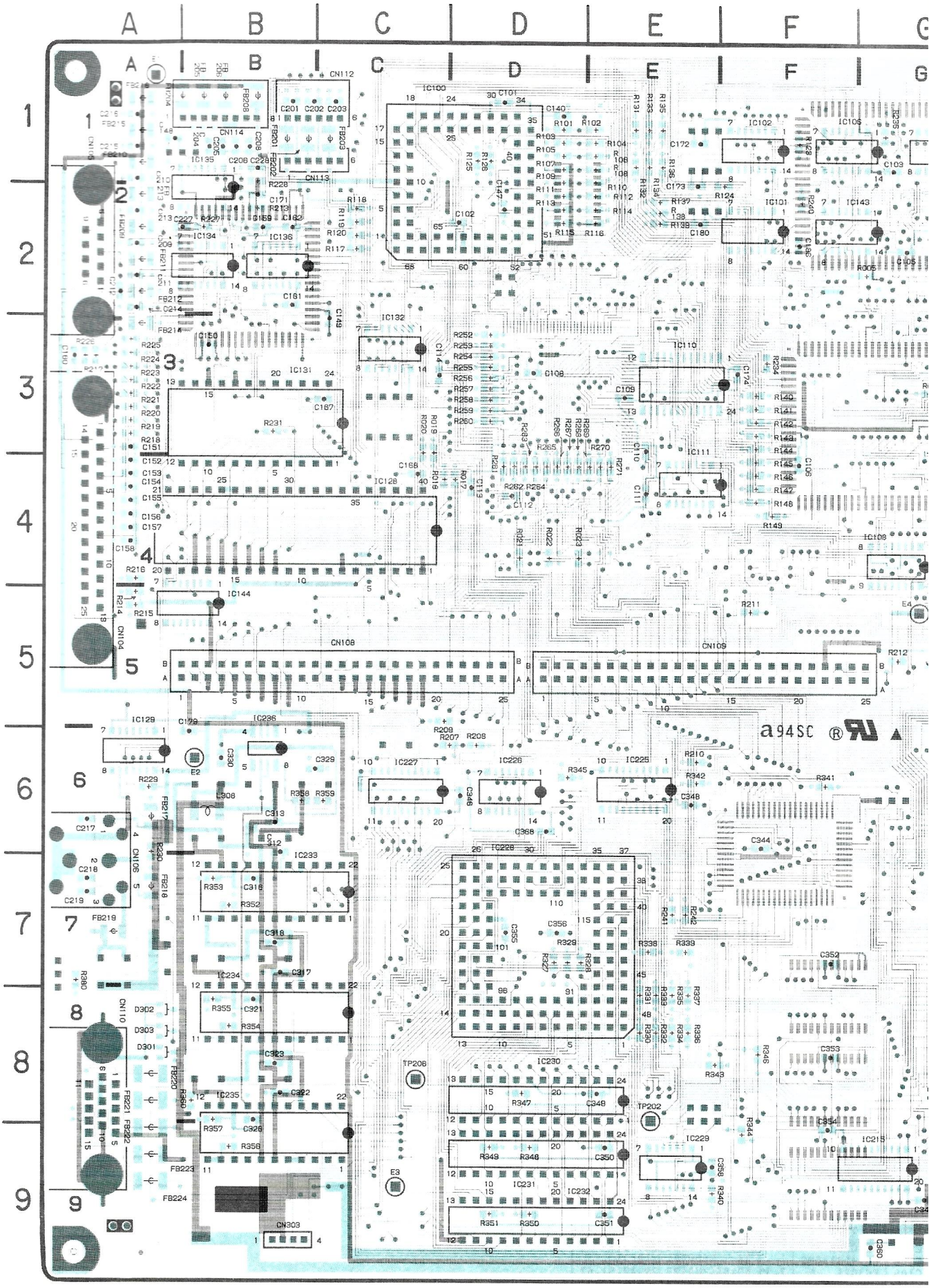

K J H G F E D C
SONY MADE IN JAPAN
SY-143
1-630-412-12
A
IC103
IC100
IC113
IC107
IC109
IC131
IC128
IC141
IC224
IC220
IC221
IC222
IC223
IC228
IC230
IC231
IC232
IC233
IC234
IC235
DSC100
DSC101
DSC103
DL100
CN112
CN113
CN109
CN108
CN101
CN102
CN303
JP201
JP202
TP201
TP202
TP206
X203
E4
E3
LOT NO.

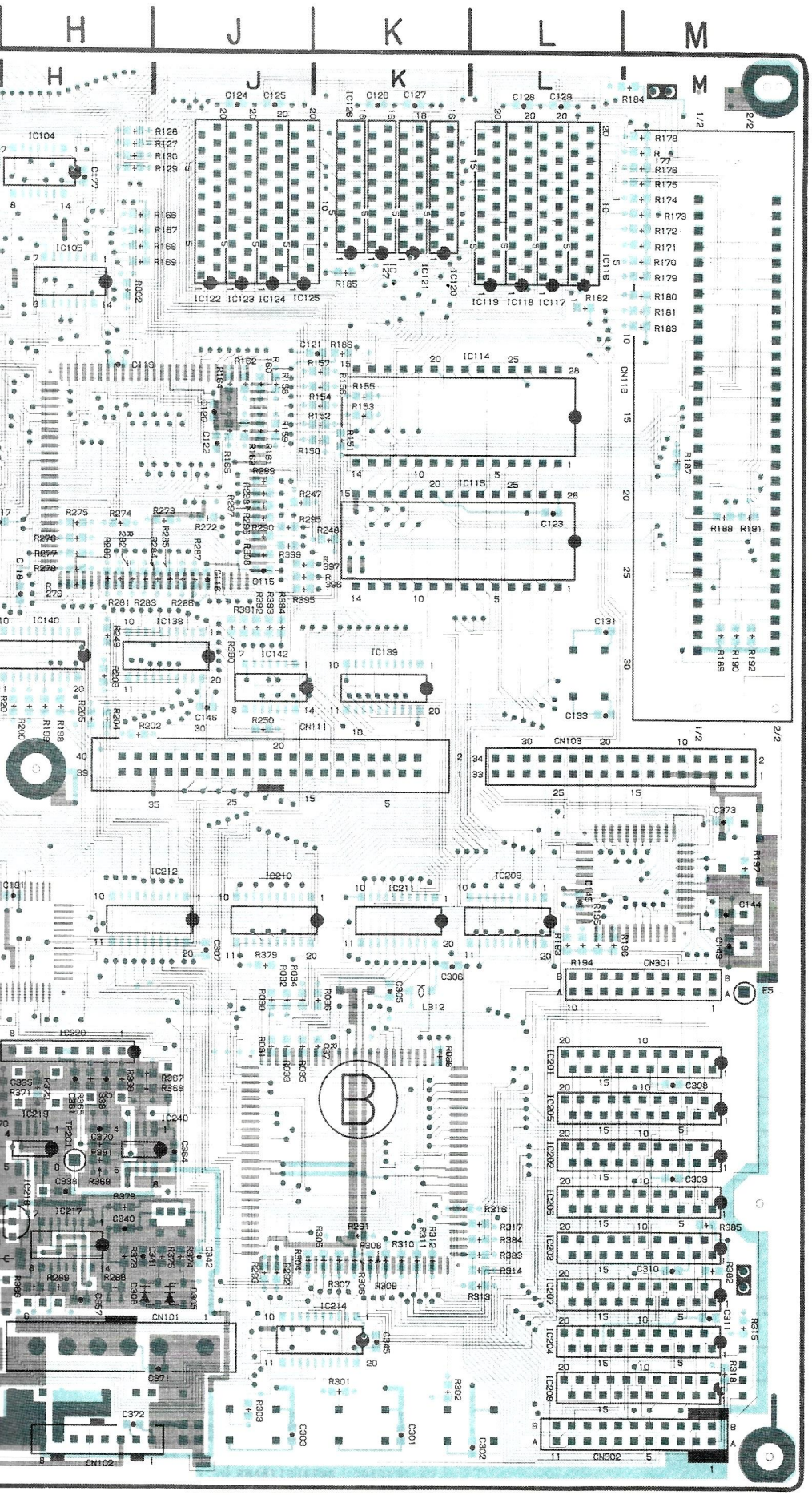


SY-143 – COMPONENT SIDE –

1-630-412-12
VIW-5600D(EK)

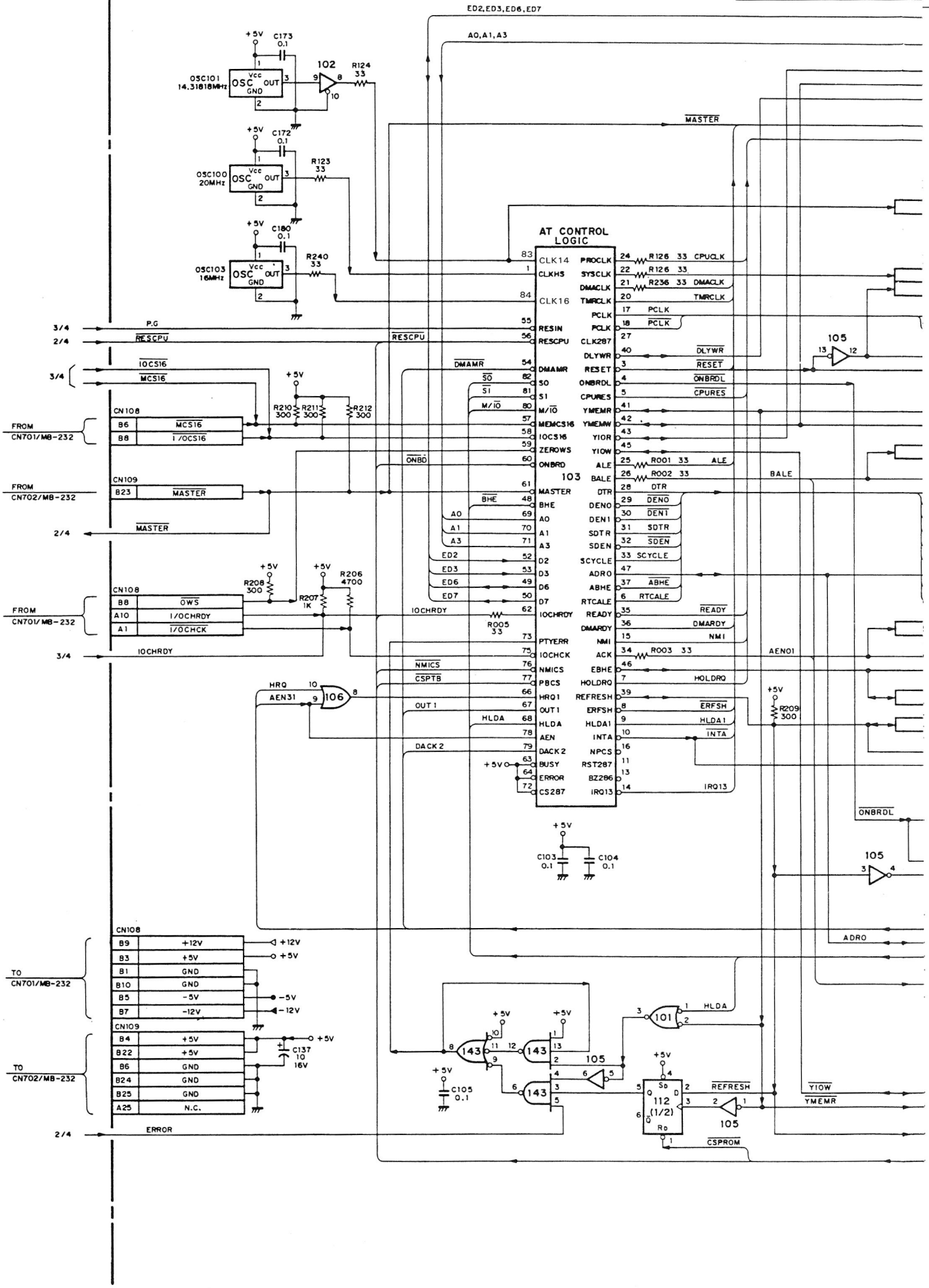
*C101	D-1	*C218	A-7	CN113	B-1	*IC140	H-4	*R106	E-1	*R189	M-4	*R280	H-4	*R374	J-8
*C102	D-2	*C219	A-7	CN114	B-1	IC141	H-6	*R107	D-1	*R190	M-4	*R281	H-4	*R375	J-8
*C103	G-1	*C227	B-2	CN115	G-8	*IC142	J-4	*R108	E-1	*R191	M-3	*R282	H-4	*R378	H-8
*C104	G-2	*C228	B-1	CN116	M-2	*IC143	F-2	*R109	D-1	*R192	M-4	*R283	H-4	*R379	J-6
*C105	G-2	*C301	L-9	CN301	M-6	*IC144	B-5	*R110	E-2	*R193	L-6	*R284	J-4	*R380	A-7
*C106	F-4	*C302	K-9	CN302	M-9	IC201	L-7	*R111	D-2	*R194	L-6	*R285	J-4	*R381	H-7
*C107	G-3	*C303	J-9	CN303	B-9	IC202	L-7	*R112	E-2	*R195	L-6	*R286	J-6	*R382	M-8
*C108	D-3	C304	K-6			IC203	L-8	*R113	D-2	*R196	M-6	*R287	J-4	*R383	L-8
*C109	E-3	*C305	K-7	*D301	A-8	IC204	L-9	*R114	E-2	*R197	M-6	*R288	H-8	*R384	L-8
*C110	E-3	*C306	K-6	*D302	A-8	IC205	L-7	*R115	D-2	*R198	H-5	*R289	H-8	*R385	M-8
*C111	E-4	*C307	J-6	*D303	A-8	IC206	L-8	*R116	E-2	*R199	H-5	*R290	J-4	*R386	H-8
*C112	D-4	*C308	M-7	*D305	J-8	IC207	L-8	*R117	C-2	*R200	H-5	*R291	K-8	*R390	J-4
*C113	D-4	*C309	M-8	*D306	H-8	IC208	L-9	*R118	C-2	*R201	H-5	*R292	J-8	*R391	J-4
*C114	C-3	*C310	M-8			*IC209	L-6	*R119	C-2	*R202	H-5	*R293	J-8	*R392	J-4
*C115	J-4	*C311	M-9	DL100	C-3	*IC210	J-6	*R120	C-2	*R203	H-4	*R295	J-3	*R393	J-4
*C116	J-4	*C312	B-6			*IC211	K-6	*R123	F-1	*R204	H-5	*R296	J-3	*R394	J-4
*C117	H-3	*C313	B-6	E1	A-1	*IC212	H-6	*R124	F-2	*R205	H-5	*R297	J-3	*R395	J-4
*C118	H-4	C314	B-6	E2	B-6	IC213	J-7	*R125	D-1	*R206	G-5	*R298	J-3	*R396	K-4
*C119	H-2	C315	B-6	E3	C-9	*IC214	K-9	*R126	D-1	*R207	D-6	*R299	J-3	*R397	K-4
*C120	J-3	*C316	B-7	E4	G-5	*IC215	G-9	*R127	J-1	*R208	D-6	*R301	K-9	*R398	J-4
*C121	K-2	*C317	B-7	E5	M-6	*IC217	H-8	*R128	J-1	*R209	C-5	*R302	K-9	*R399	J-4
*C122	J-3	*C318	B-7			IC218	H-8	*R129	J-1	*R210	E-6	*R303	J-9		
*C123	L-3	C319	B-7	*FB208	B-1	*IC219	H-7	*R130	J-1	*R211	F-5	*R304	J-8	SW301	A-7
*C124	J-1	C320	B-7	*FB209	A-2	IC220	F-7	*R131	E-1	*R212	G-5	*R305	K-8		
*C125	J-1	*C321	B-8	*FB210	A-1	IC221	F-7	*R132	E-2	*R213	B-2	*R306	K-8	TH301	A-7
*C126	K-1	*C322	B-8	*FB211	A-2	IC222	F-8	*R133	E-1	*R214	A-5	*R307	K-8	TH302	A-7
*C127	K-1	*C323	B-8	*FB212	A-2	IC223	F-9	*R134	E-2	*R215	A-5	*R308	K-8		
*C128	L-1	C324	B-8	*FB213	A-2	IC224	F-6	*R135	E-1	*R216	A-4	*R309	K-8	TP201	H-7
*C129	L-1	C325	B-8	*FB214	A-3	*IC225	E-6	*R136	E-1	*R217	A-3	*R310	K-8	TP202	E-8
C130	L-4	*C326	B-9	*FB215	A-1	*IC226	D-6	*R137	E-2	*R218	A-3	*R311	K-8	TP203	A-7
*C131	L-4	C327	B-6	*FB216	A-1	*IC227	C-6	*R138	E-2	*R219	A-3	*R312	K-8	TP204	B-8
C132	L-4	C328	B-6	*FB217	A-6	IC228	D-6	*R139	E-2	*R220	A-3	*R313	L-8	TP205	A-9
*C133	L-5	*C329	C-6	*FB218	A-7	*IC229	E-9	*R140	F-3	*R221	A-3	*R314	L-8	TP206	C-8
C137	C-6	*C330	B-6	*FB219	A-7	*IC230	D-8	*R141	F-3	*R222	A-3	*R315	M-9		
C138	G-9	C332	H-7	*FB220	A-8	IC231	D-9	*R142	F-3	*R223	A-3	*R316	L-8	WL101	A-5
C139	J-9	*C333	H-7	*FB221	A-8	IC232	D-9	*R143	F-3	*R224	A-3	*R317	L-8		
*C140	D-1	C334	J-7	*FB222	A-9	IC233	C-7	*R144	F-3	*R225	A-3	*R318	M-9	X100	M-6
C141	H-9	*C335	H-7	*FB223	A-9	IC234	C-7	*R145	F-4	*R226	A-3	*R327	D-7	X200	K-9
C142	H-9	C336	H-7	*FB224	A-9	IC235	C-8	*R146	F-4	*R227	B-2	*R328	E-7	X202	K-9
*C143	M-6	C337	H-8	*FB225	H-8	*IC236	B-5	*R147	F-4	*R228	B-2	*R329	D-7	X203	J-9
*C144	M-6	*C338	H-8			*IC240	J-7	*R148	F-4	*R229	A-6	*R330	E-8		
*C145	L-6	C339	H-7	IC001	D-2			*R149	F-4	*R230	A-6	*R331	E-8		
*C146	J-5	*C340	H-8	IC100	D-1	JP201	G-6	*R150	J-3	*R231	B-3	*R332	E-8	*:	
*C147	D-2	*C341	J-8	*IC101	F-2	JP202	E-8	*R151	K-3	*R232	F-3	*R333	E-8	SOLDERING SIDE	
*C148	A-1	*C342	J-8	*IC102	F-1			*R152	K-3	*R234	F-3	*R334	E-8		
*C149	C-3	C343	H-8	IC103	G-1	L307	J-8	*R153	K-3	*R236	G-1	*R335	E-8		
*C150	B-3	*C344	F-6	*IC104	H-1	*L308	B-6	*R154	K-3	*R240	F-2	*R336	E-8		
*C151	A-3	*C346	D-6	*IC105	H-2	*L312	K-6	*R155	K-3	*R241	G-1	*R337	E-8		
*C152	A-4	*C347	G-9	*IC106	F-1	L313	B-6	*R156	K-3	*R242	E-2	*R338	E-7		
*C153	A-4	*C348	E-6	IC107	F-3			*R157	K-2	*R247	J-3	*R339	E-7		
*C154	A-4	*C349	E-8	*IC108	G-4	OSC100	E-1	*R158	J-3	*R248	K-4	*R340	E-9		
*C155	A-4	*C350	E-9	IC109	D-3	OSC101	E-1	*R159	J-3	*R249	H-4	*R343	L-7		
*C156	A-4	*C351	E-9	*IC110	E-3	OSC102	A-3	*R160	J-2	*R250	J-5	*R341	F-9		
*C157	A-4	*C352	F-7	*IC111	E-4	OSC103	E-2	*R161	J-3	*R252	D-3	*R342	D-6		
*C158	A-4	*C353	F-8	*IC112	G-1			*R162	J-2	*R253	D-3	*R343	L-7		
*C159	B-2	*C354	F-8	IC113	H-2	*R001	G-3	*R163	J-3	*R254	D-3	*R344	F-9		
*C160	A-3	*C355	D-7	IC114	L-2	*R002	H-2	*R164	J-3	*R255	D-3	*R345	D-6		
*C161	B-2	*C356	D-7	IC115	L-3	*R003	G-2	*R165	J-3	*R256	D-3	*R346	F-8		
*C162	B-2	*C357	H-9	IC116	L-2	*R004	G-2	*R166	J-2	*R257	D-3	*R347	D-8		
*C167	C-3	*C358	E-9	IC117	L-2	*R005	G-2	*R167	J-2	*R258	D-3	*R348	D-9		
*C168	C-4	C359	G-9	IC118	L-2	*R017	D-4	*R168	J-2	*R259	D-3	*R349	D-9		
C169	A-7	*C360	G-9	IC119	L-2	*R018	C-4	*R169	J-2	*R260	D-3	*R350	D-9		
*C171	B-2	*C361	H-7	IC120	K-2	*R019	C-3	*R170	M-2	*R261	D-4	*R351	D-9		
*C172	E-1	*C364	J-8	IC121	K-2	*R020	C-3	*R171	M-2	*R262	D-4	*R352	B-7		
*C173	E-2	*C368	D-6	IC122	J-2	*R021	D-4	*R172	M-2	*R263	D-3	*R353	B-7		
*C174	F-3	*C370	H-7	IC123	J-2	*R022	D-4	*R173	M-2	*R264	D-4	*R354	B-8		
C175	M-5	*C371	J-9	IC124	J-2	*R023	D-4	*R174	M-1	*R265	D-3	*R355	B-8		
*C177	H-1	*C372	H-9	IC125	J-2	*R030	J-7	*R175	M-1	*R266	D-3	*R356	B-9		
*C178	G-4	*C373	M-5	IC126	K-2	*R031	J-7	*R176	M-1	*R267	D-3	*R357	B-9		
*C179	B-5			IC127	K-2	*R032	J-6	*R177	M-1	*R268	D-3	*R358	B-6		
*C180	E-2	CN101	H-9	IC128	C-4	*R033	J-7	*R178	M-1	*R269	E-3	*R359	C-6		
*C181	H-6	CN102	H-9	*IC129	A-5	*R034	J-6	*R179	M-2	*R270	E-3	*R360	B-8		
*C186	F-2	CN103	L-5	IC131	B-3	*R035	J-7	*R180	M-2	*R271	E-4	*R365	H-7		
*C201	B-1	CN104	A-4	*IC132	C-3	*R036	K-7	*R181	M-2	*R272	J-3	*R366	H-7		
*C202	B-1	CN105	A-2	IC133	B-2	*R037	K-7	*R182	L-2	*R273	J-3	*R367	J-7		
*C203	C-1	CN106	A-6	*IC134	B-2	*R038	K-7	*R183	M-2	*R274	H-3	*R368	J-7		
*C204	B-1	CN108	C-5	*IC135	B-1	*R101	D-1	*R184	M-1	*R275	H-3	*R369	H-8		
*C205	B-1	CN109	E-5	*IC136	B-2	*R102	E-1	*R185	K-2	*R276	H-4	*R370	H-7		
*C206	B-1	CN110	A-8	IC137	M-6	*R103	D-1	*R186	K-2	*R277	H-4	*R371	H-7		
*C208	B-1	CN111	J-5	*IC138	J-4	*R104	E-1	*R187	M-3	*R278	H-4	*R372	H-7		
*C217	A-6	CN112	B-1	*IC139	K-4	*R105	D-1	*R188	M-3	*R279	H-4	*R373	H-8		

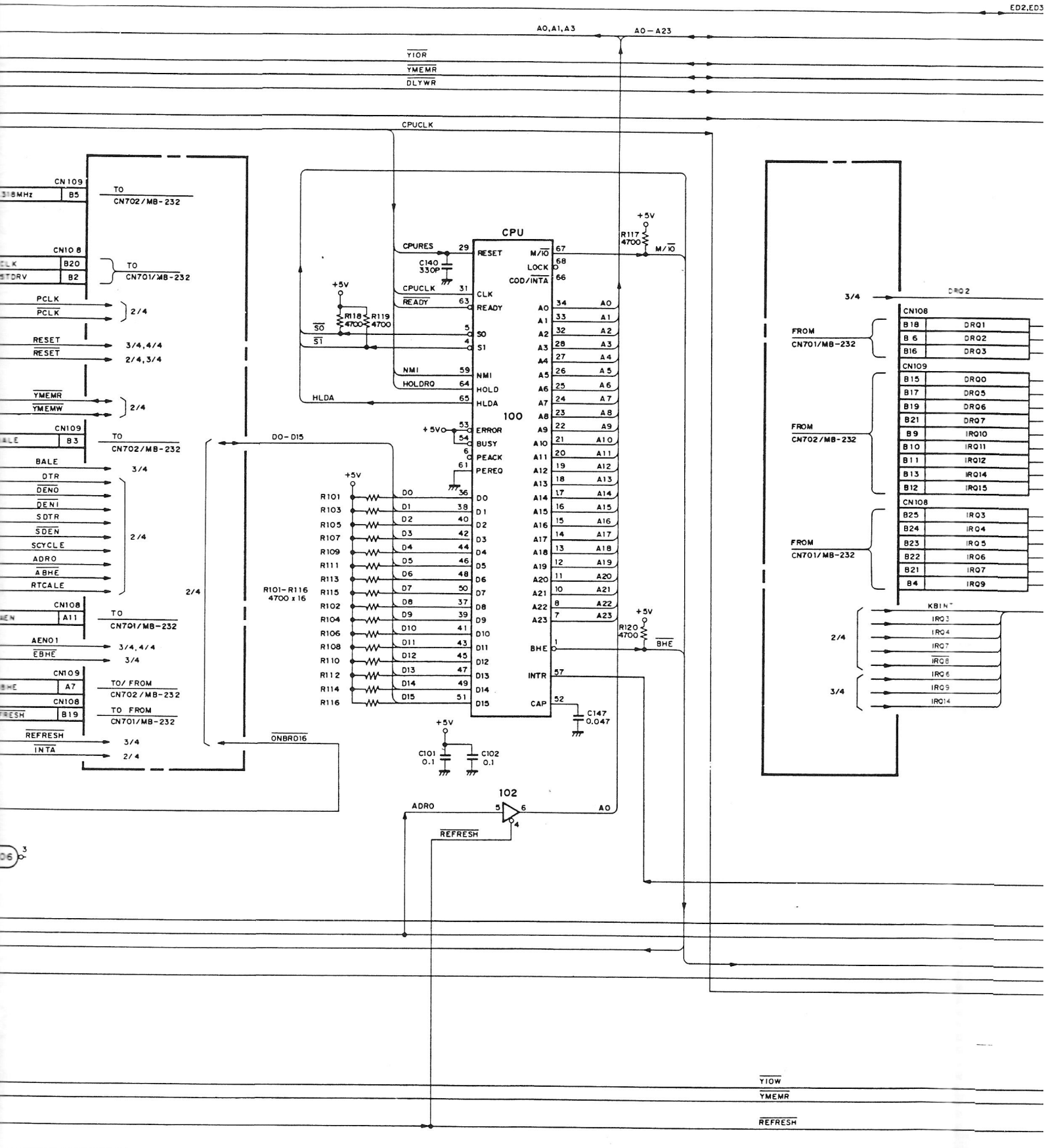

A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
IC100
IC101
IC102
IC103
IC105
IC106
IC107
IC108
IC109
IC110
IC111
IC112
IC113
IC114
IC115
IC116
IC117
IC118
IC119
IC120
IC121
IC122
IC123
IC124
IC125
IC126
IC127
IC128
IC129
IC130
IC131
IC132
IC133
IC134
IC135
IC136
IC137
IC138
IC139
IC140
IC141
IC142
IC143
IC144
IC145
IC146
IC147
IC148
IC149
IC150
IC151
IC152
IC153
IC154
IC155
IC156
IC157
IC158
IC159
IC160
IC161
IC162
IC163
IC164
IC165
IC166
IC167
IC168
IC169
IC170
IC171
IC172
IC173
IC174
IC175
IC176
IC177
IC178
IC179
IC180
IC181
IC182
IC183
IC184
IC185
IC186
IC187
IC188
IC189
IC190
IC191
IC192
IC193
IC194
IC195
IC196
IC197
IC198
IC199
IC200
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
IC211
IC212
IC213
IC214
IC215
IC216
IC217
IC218
IC219
IC220
IC221
IC222
IC223
IC224
IC225
IC226
IC227
IC228
IC229
IC230
IC231
IC232
IC233
IC234
IC235
IC236
CN101
CN102
CN103
CN104
CN105
CN106
CN107
CN108
CN109
CN110
CN111
CN112
CN113
CN114
CN115
CN116
CN117
CN118
CN119
CN120
CN121
CN122
CN123
CN124
CN125
CN126
CN127
CN128
CN129
CN130
CN131
CN132
CN133
CN134
CN135
CN136
CN137
CN138
CN139
CN140
CN141
CN142
CN143
CN144
CN145
CN146
CN147
CN148
CN149
CN150
CN151
CN152
CN153
CN154
CN155
CN156
CN157
CN158
CN159
CN160
CN161
CN162
CN163
CN164
CN165
CN166
CN167
CN168
CN169
CN170
CN171
CN172
CN173
CN174
CN175
CN176
CN177
CN178
CN179
CN180
CN181
CN182
CN183
CN184
CN185
CN186
CN187
CN188
CN189
CN190
CN191
CN192
CN193
CN194
CN195
CN196
CN197
CN198
CN199
CN200
CN201
CN202
CN203
CN204
CN205
CN206
CN207
CN208
CN209
CN210
CN211
CN212
CN213
CN214
CN215
CN216
CN217
CN218
CN219
CN220
CN221
CN222
CN223
CN224
CN225
CN226
CN227
CN228
CN229
CN230
CN231
CN232
CN233
CN234
CN235
CN236
CN237
CN238
CN239
CN240
CN241
CN242
CN243
CN244
CN245
CN246
CN247
CN248
CN249
CN250
CN251
CN252
CN253
CN254
CN255
CN256
CN257
CN258
CN259
CN260
CN261
CN262
CN263
CN264
CN265
CN266
CN267
CN268
CN269
CN270
CN271
CN272
CN273
CN274
CN275
CN276
CN277
CN278
CN279
CN280
CN281
CN282
CN283
CN284
CN285
CN286
CN287
CN288
CN289
CN290
CN291
CN292
CN293
CN294
CN295
CN296
CN297
CN298
CN299
CN300
CN301
CN302
CN303
CN304
CN305
CN306
CN307
CN308
CN309
CN310
CN311
CN312
CN313
CN314
CN315
CN316
CN317
CN318
CN319
CN320
CN321
CN322
CN323
CN324
CN325
CN326
CN327
CN328
CN329
CN330
CN331
CN332
CN333
CN334
CN335
CN336
CN337
CN338
CN339
CN340
CN341
CN342
CN343
CN344
CN345
CN346
CN347
CN348
CN349
CN350
CN351
CN352
CN353
CN354
CN355
CN356
CN357
CN358
CN359
CN360
CN361
CN362
CN363
CN364
CN365
CN366
CN367
CN368
CN369
CN370
CN371
CN372
CN373
CN374
CN375
CN376
CN377
CN378
CN379
CN380
CN381
CN382
CN383
CN384
CN385
CN386
CN387
CN388
CN389
CN390
CN391
CN392
CN393
CN394
CN395
CN396
CN397
CN398
CN399
CN400
CN401
CN402
CN403
CN404
CN405
CN406
CN407
CN408
CN409
CN410
CN411
CN412
CN413
CN414
CN415
CN416
CN417
CN418
CN419
CN420
CN421
CN422
CN423
CN424
CN425
CN426
CN427
CN428
CN429
CN430
CN431
CN432
CN433
CN434
CN435
CN436
CN437
CN438
CN439
CN440
CN441
CN442
CN443
CN444
CN445
CN446
CN447
CN448
CN449
CN450
CN451
CN452
CN453
CN454
CN455
CN456
CN457
CN458
CN459
CN460
CN461
CN462
CN463
CN464
CN465
CN466
CN467
CN468
CN469
CN470
CN471
CN472
CN473
CN474
CN475
CN476
CN477
CN478
CN479
CN480
CN481
CN482
CN483
CN484
CN485
CN486
CN487
CN488
CN489
CN490
CN491
CN492
CN493
CN494
CN495
CN496
CN497
CN498
CN499
CN500
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN508
CN509
CN510
CN511
CN512
CN513
CN514
CN515
CN516
CN517
CN518
CN519
CN520
CN521
CN522
CN523
CN524
CN525
CN526
CN527
CN528
CN529
CN530
CN531
CN532
CN533
CN534
CN535
CN536
CN537
CN538
CN539
CN540
CN541
CN542
CN543
CN544
CN545
CN546
CN547
CN548
CN549
CN550
CN551
CN552
CN553
CN554
CN555
CN556
CN557
CN558
CN559
CN560
CN561
CN562
CN563
CN564
CN565
CN566
CN567
CN568
CN569
CN570
CN571
CN572
CN573
CN574
CN575
CN576
CN577
CN578
CN579
CN580
CN581
CN582
CN583
CN584
CN585
CN586
CN587
CN588
CN589
CN590
CN591
CN592
CN593
CN594
CN595
CN596
CN597
CN598
CN599
CN600
CN601
CN602
CN603
CN604
CN605
CN606
CN607
CN608
CN609
CN610
CN611
CN612
CN613
CN614
CN615
CN616
CN617
CN618
CN619
CN620
CN621
CN622
CN623
CN624
CN625
CN626
CN627
CN628
CN629
CN630
CN631
CN632
CN633
CN634
CN635
CN636
CN637
CN638
CN639
CN640
CN641
CN642
CN643
CN644
CN645
CN646
CN647
CN648
CN649
CN650
CN651
CN652
CN653
CN654
CN655
CN656
CN657
CN658
CN659
CN660
CN661
CN662
CN663
CN664
CN665
CN666
CN667
CN668
CN669
CN670
CN671
CN672
CN673
CN674
CN675
CN676
CN677
CN678
CN679
CN680
CN681
CN682
CN683
CN684
CN685
CN686
CN687
CN688
CN689
CN690
CN691
CN692
CN693
CN694
CN695
CN696
CN697
CN698
CN699
CN700
CN701
CN702
CN703
CN704
CN705
CN706
CN707
CN708
CN709
CN710
CN711
CN712
CN713
CN714
CN715
CN716
CN717
CN718
CN719
CN720
CN721
CN722
CN723
CN724
CN725
CN726
CN727
CN728
CN729
CN730
CN731
CN732
CN733
CN734
CN735
CN736
CN737
CN738
CN739
CN740
CN741
CN742
CN743
CN744
CN745
CN746
CN747
CN748
CN749
CN750
CN751
CN752
CN753
CN754
CN755
CN756
CN757
CN758
CN759
CN760
CN761
CN762
CN763
CN764
CN765
CN766
CN767
CN768
CN769
CN770
CN771
CN772
CN773
CN774
CN775
CN776
CN777
CN778
CN779
CN780
CN781
CN782
CN783
CN784
CN785
CN786
CN787
CN788
CN789
CN790
CN791
CN792
CN793
CN794
CN795
CN796
CN797
CN798
CN799
CN800
CN801
CN802
CN803
CN804
CN805
CN806
CN807
CN808
CN809
CN810
CN811
CN812
CN813
CN814
CN815
CN816
CN817
CN818
CN819
CN820
CN821
CN822
CN823
CN824
CN825
CN826
CN827
CN828
CN829
CN830
CN831
CN832
CN833
CN834
CN835
CN836
CN837
CN838
CN839
CN840
CN841
CN842
CN843
CN844
CN845
CN846
CN847
CN848
CN849
CN850
CN851
CN852
CN853
CN854
CN855
CN856
CN857
CN858
CN859
CN860
CN861
CN862
CN863
CN864
CN865
CN866
CN867
CN868
CN869
CN870
CN871
CN872
CN873
CN874
CN875
CN876
CN877
CN878
CN879
CN880
CN881
CN882
CN883
CN884
CN885
CN886
CN887
CN888
CN889
CN890
CN891
CN892
CN893
CN894
CN895
CN896
CN897
CN898
CN899
CN900
CN901
CN902
CN903
CN904
CN905
CN906
CN907
CN908
CN909
CN910
CN911
CN912
CN913
CN914
CN915
CN916
CN917
CN918
CN919
CN920
CN921
CN922
CN923
CN924
CN925
CN926
CN927
CN928
CN929
CN930
CN931
CN932
CN933
CN934
CN935
CN936
CN937
CN938
CN939
CN940
CN941
CN942
CN943
CN944
CN945
CN946
CN947
CN948
CN949
CN950
CN951
CN952
CN953
CN954
CN955
CN956
CN957
CN958
CN959
CN960
CN961
CN962
CN963
CN964
CN965
CN966
CN967
CN968
CN969
CN970
CN971
CN972
CN973
CN974
CN975
CN976
CN977
CN978
CN979
CN980
CN981
CN982
CN983
CN984
CN985
CN986
CN987
CN988
CN989
CN990
CN991
CN992
CN993
CN994
CN995
CN996
CN997
CN998
CN999
CN1000
a94SC



SY-143 – SOLDERING SIDE –

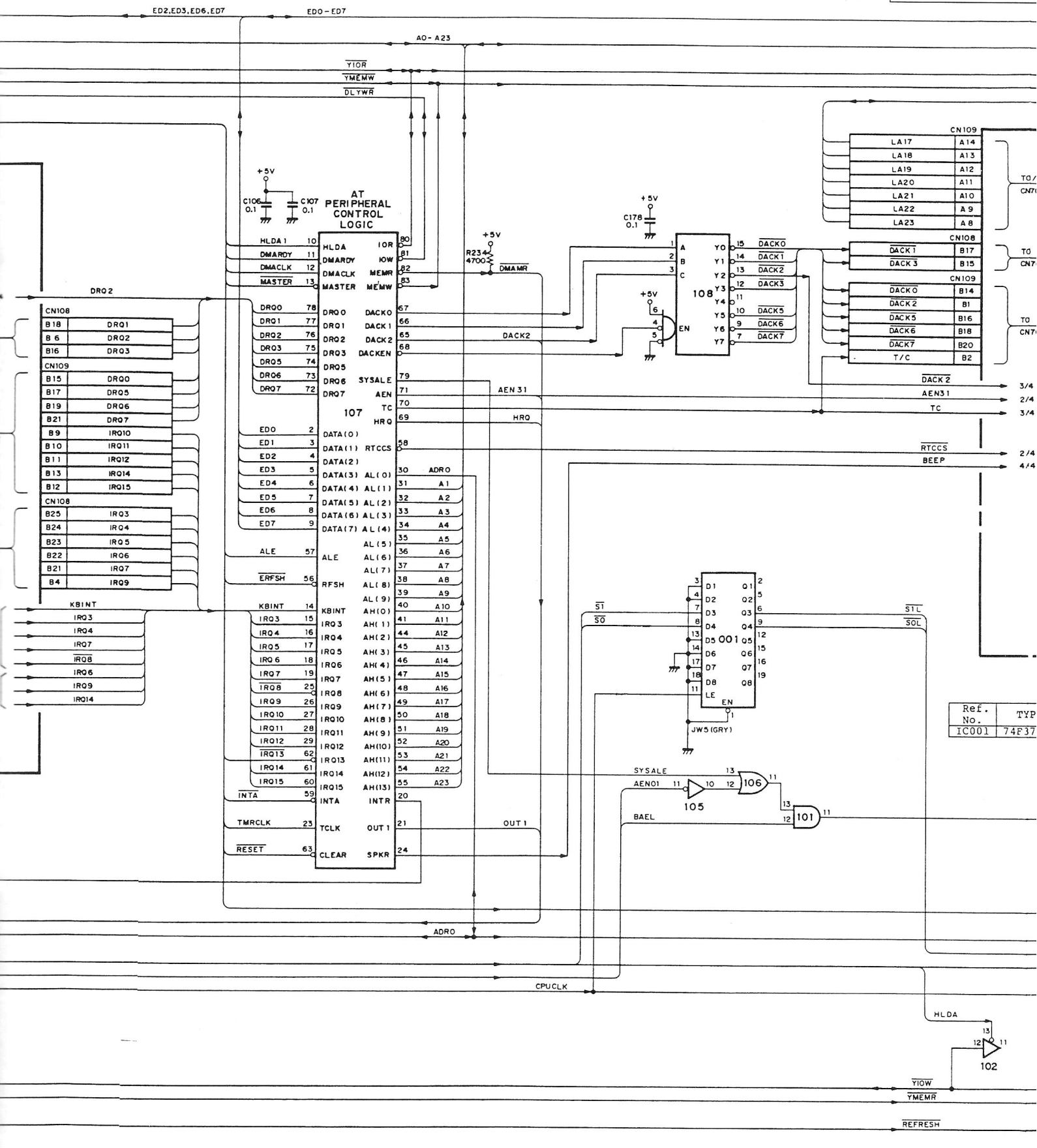
1-630-412-12
VIW-5600D(EK)


ED2,ED3,ED6,ED7
A0,A1,A3
AT CONTROL LOGIC
103
OSC101 14.31818MHz
OSC100 20MHz
OSC103 16MHz
C173 0.1
C172 0.1
C180 0.1
102
R124 33
R123 33
R240 33
MASTER
RESCPU
IOCS16
MCS16
DMAMR
ONBRD
IOCHRDY
BHE
AEN31
HRQ
OUT1
HLDA
DACK2
NMICS
CSPTB
ERROR
BALE
AENO1
ADRO
ONBRDL
YIOW
YMEMR
REFRESH
CSPROM
R210 300
R211 300
R212 300
R208 300
R207 1K
R206 4700
R209 300
C103 0.1
C104 0.1
C105 0.1
C137 10 16V
CN108
CN109
FROM CN701/MB-232
FROM CN702/MB-232
TO CN701/MB-232
TO CN702/MB-232
+12V
+5V
-5V
-12V
GND
N.C.



REF. No.	TYPE	PIN No. DIGITAL +5V	PIN No. DIGITAL GND
IC100	N80286-10	30,62	9,35,60
IC101	74F08SJ	14	7
IC102	SN74LS125ANS	14	7
IC103	FE3001	19,51,74	2,12,23,38,44,65
IC105	74F04SJ	14	7
IC106	74F32SJ	14	7

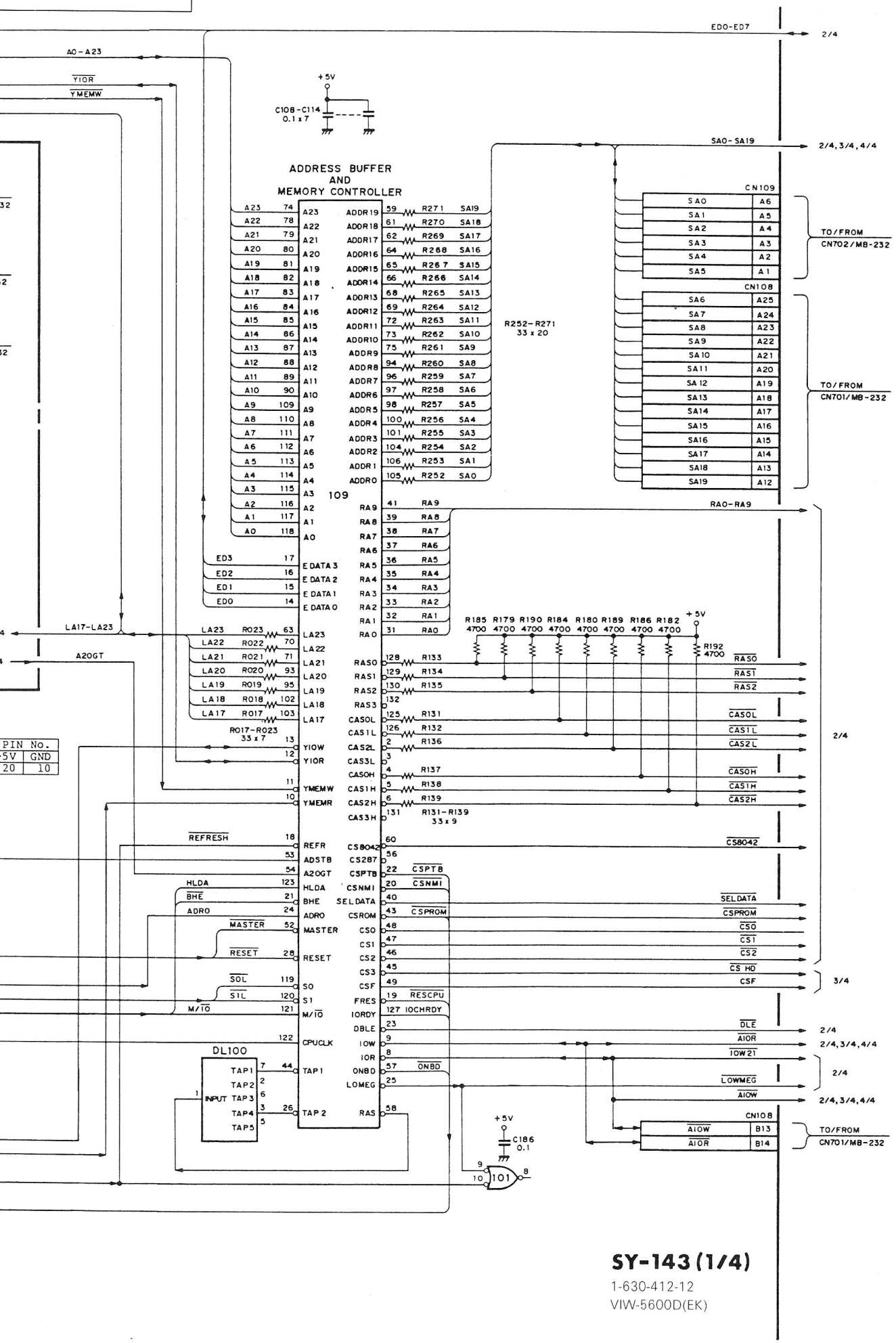
REF. No.	
IC107	F
IC108	S
IC109	F
IC112	S
IC143	S



Ref. No.	TYP
IC001	74F37

No. DIGITAL GND
9,35,60
7
7
12,23,38,44,65
7
7

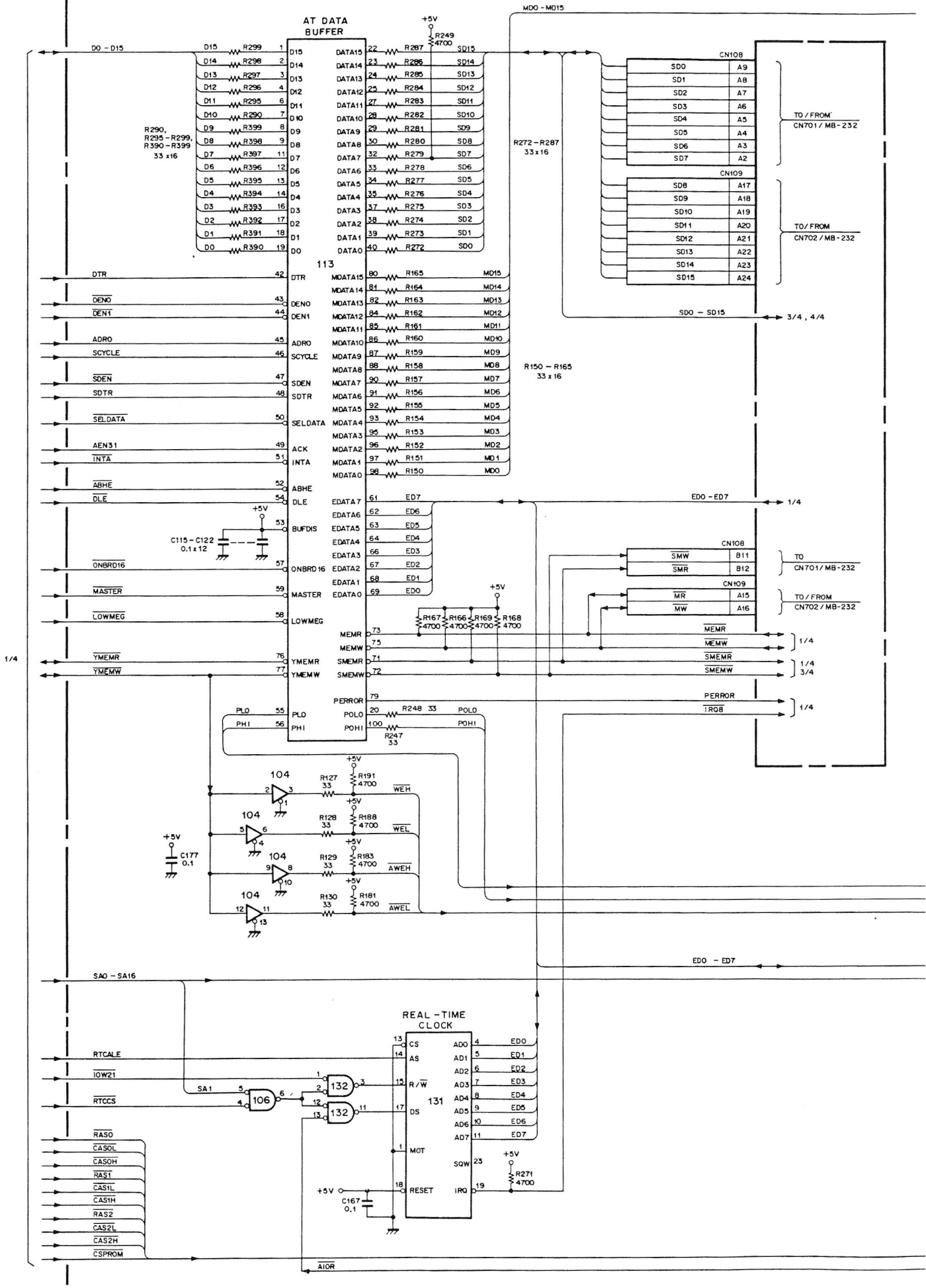
REF. No.	TYPE	PIN No.	
		DIGITAL +5V	DIGITAL GND
IC107	FE3010B	43,84	1,22,42,64
IC108	SN74LS138NS	16	8
IC109	FE3021	7,30,50,55, 77,92,107	1,27,29,42,51,67, 76,91,99,108,124
IC112	SN74LS74ANS	14	7
IC143	SN74LS04NS	14	7

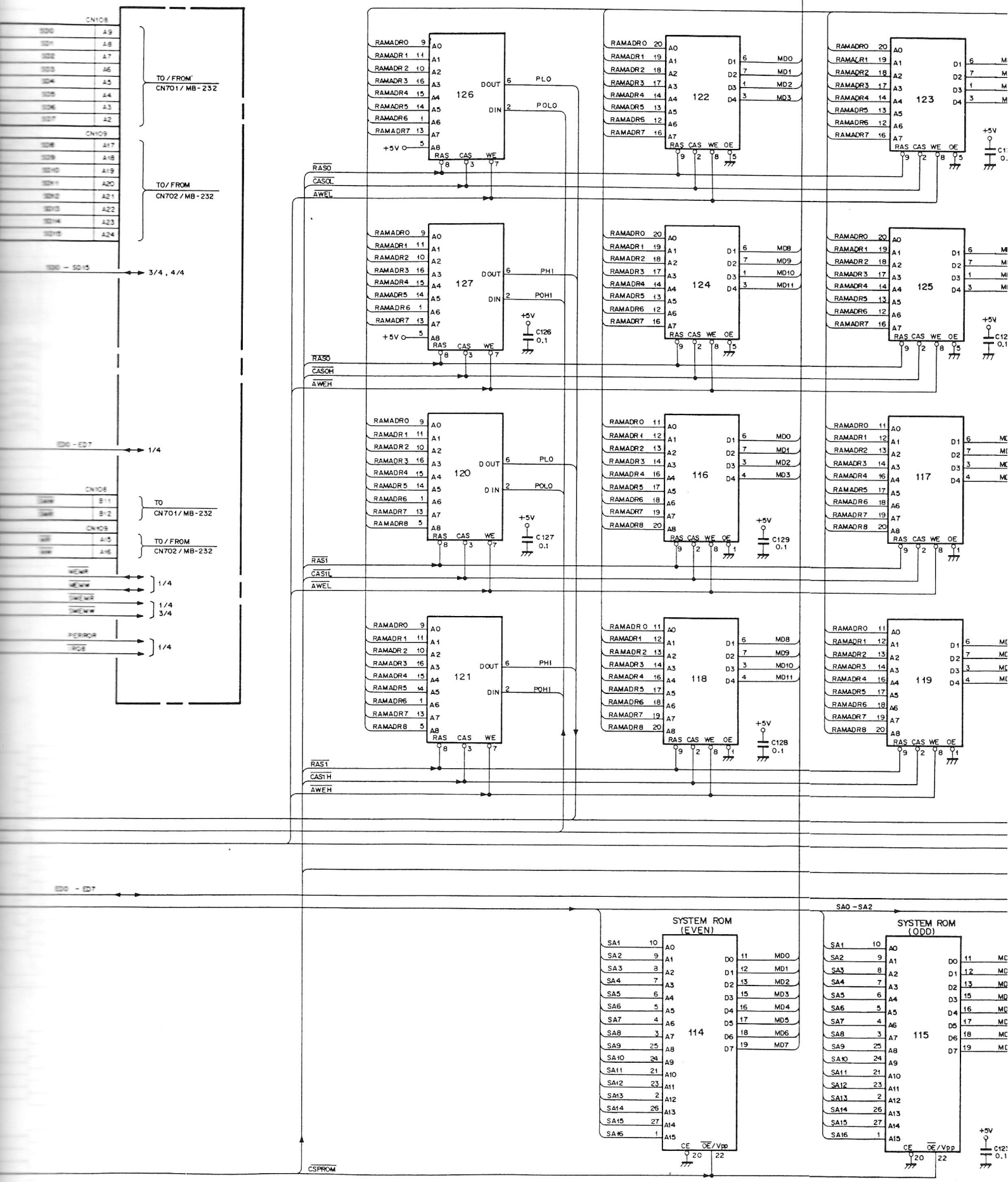


SY-143 (1/4)

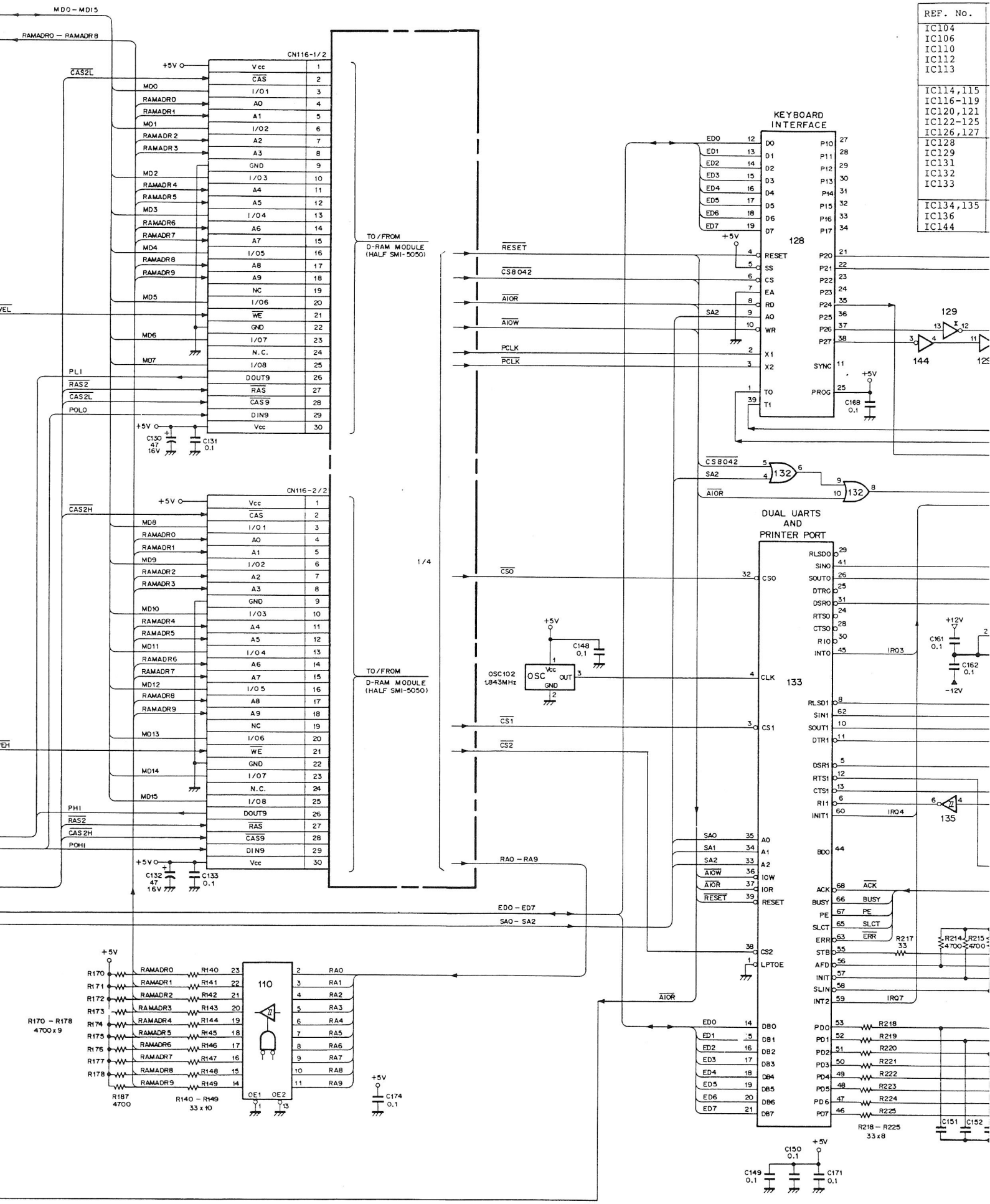
1-630-412-12

VIW-5600D(EK)

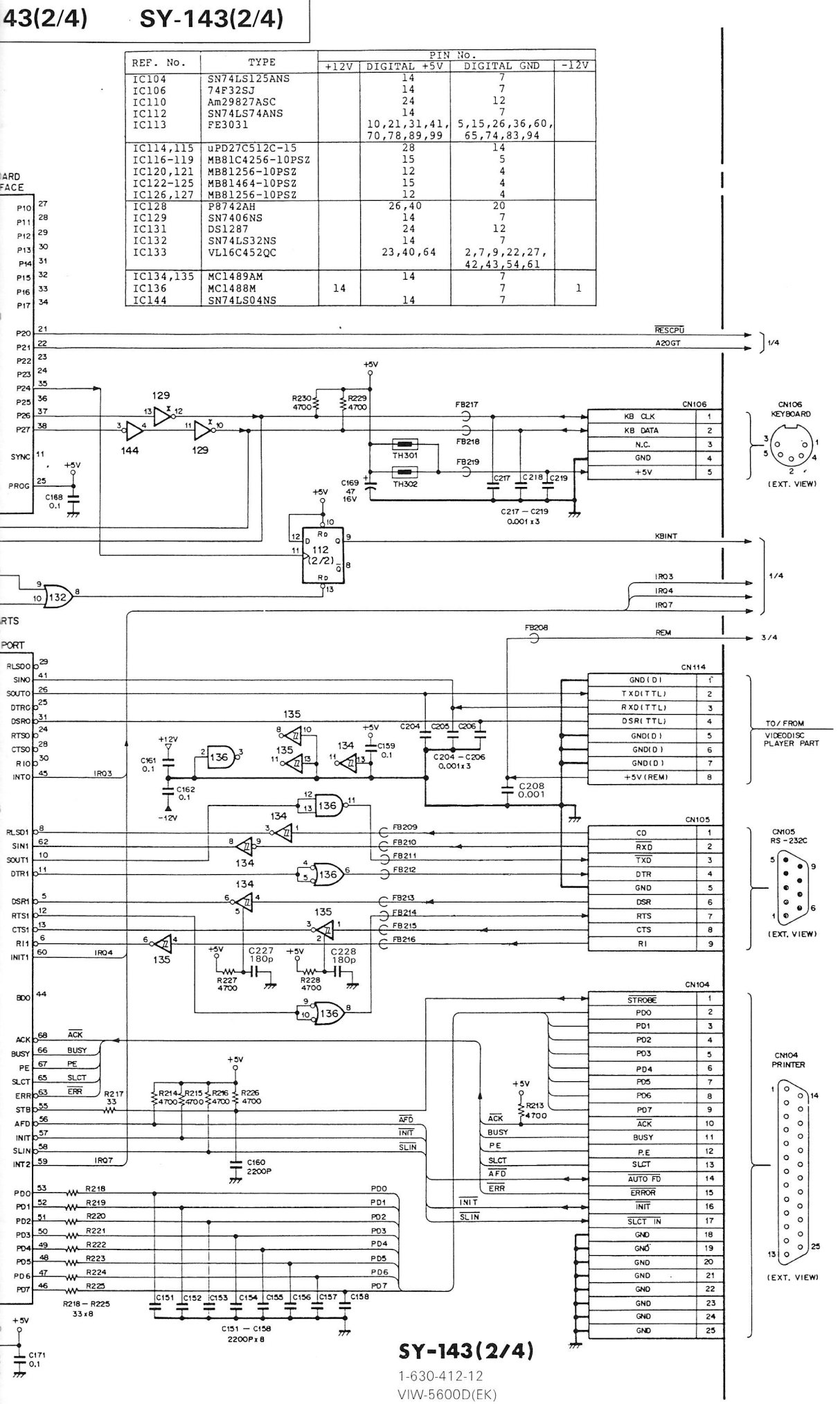

AT DATA BUFFER
113
D0 - D15
MD0 - MD15
R290, R295 - R299, R390 - R399 33 x16
R272 - R287 33x16
R150 - R165 33 x16
CN108
CN109
TO / FROM CN701 / MB-232
TO / FROM CN702 / MB-232
SD0 - SD15
3/4 , 4/4
ED0 - ED7
1/4
DTR
DENO
DEN1
ADRO
SCYCLE
SDEN
SDTR
SELDATA
AEN31
INTA
ABHE
DLE
BUFDIS
ONBRD16
MASTER
LOWMEG
YMEMR
YMEMW
MEMR
MEMW
SMEMR
SMEMW
PERROR
IRQ8
PL0
PH1
POL0
POH1
R248 33
R247 33
C115 - C122 0.1 x12
R167 4700
R166 4700
R169 4700
R168 4700
104
R127 33
R128 33
R129 33
R130 33
R191 4700
R188 4700
R183 4700
R181 4700
WEH
WEL
AWEH
AWEL
C177 0.1
SA0 - SA16
REAL - TIME CLOCK
131
RTCALE
IOW21
RTCCS
SA1
106
132
RASO
CASOL
CASOH
RAS1
CAS1L
CAS1H
RAS2
CAS2L
CAS2H
CSPROM
AIOR
R271 4700
C167 0.1


CN108
CN109
TO / FROM CN701 / MB-232
TO / FROM CN702 / MB-232
SD0 - SD15
3/4 , 4/4
ED0 - ED7
1/4
TO CN701 / MB-232
TO / FROM CN702 / MB-232
MEMWR
MEMWW
IOWEWR
IOWEWW
PERROR
PCIS
1/4
3/4
126
127
120
121
122
123
124
125
116
117
118
119
114
115
RAMADR0
RAMADR1
RAMADR2
RAMADR3
RAMADR4
RAMADR5
RAMADR6
RAMADR7
RAMADR8
DOUT
DIN
PLO
POLO
PHI
POHI
MD0
MD1
MD2
MD3
MD8
MD9
MD10
MD11
RAS CAS WE OE
+5V
C126 0.1
C127 0.1
C129 0.1
C128 0.1
RAS0
CAS0L
AWEL
CAS0H
AWEH
RAS1
CAS1L
CAS1H
SA0 - SA2
SYSTEM ROM (EVEN)
SYSTEM ROM (ODD)
SA1
SA2
SA3
SA4
SA5
SA6
SA7
SA8
SA9
SA10
SA11
SA12
SA13
SA14
SA15
SA16
CE
OE/Vpp
CSPROM

REF. No.
IC104
IC106
IC110
IC112
IC113
IC114,115
IC116-119
IC120,121
IC122-125
IC126,127
IC128
IC129
IC131
IC132
IC133
IC134,135
IC136
IC144



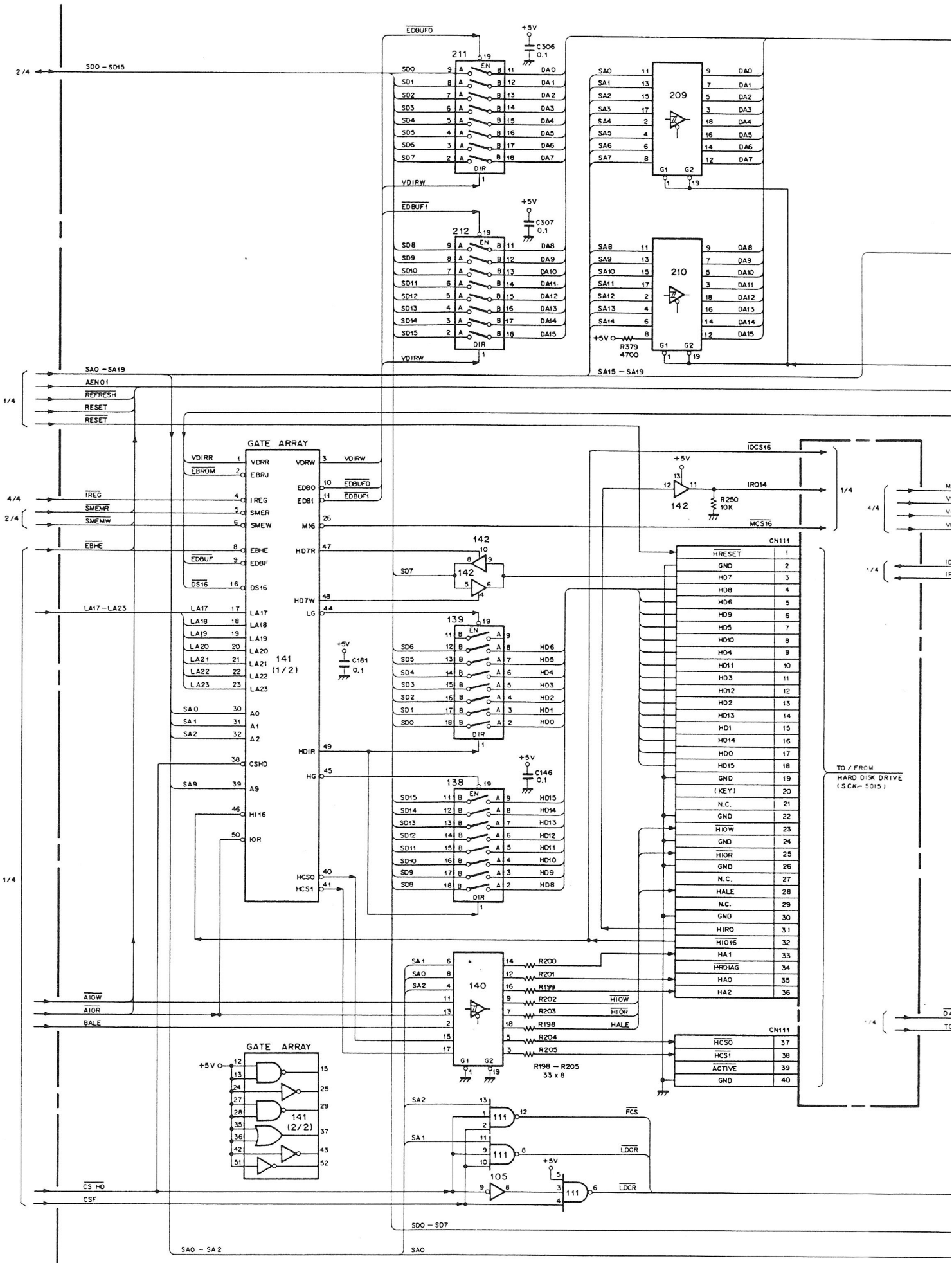
REF. No.	TYPE	PIN No. +12V	DIGITAL +5V	DIGITAL GND	-12V
IC104	SN74LS125ANS		14	7	
IC106	74F32SJ		14	7	
IC110	Am29827ASC		24	12	
IC112	SN74LS74ANS		14	7	
IC113	FE3031		10,21,31,41, 70,78,89,99	5,15,26,36,60, 65,74,83,94	
IC114,115	uPD27C512C-15		28	14	
IC116-119	MB81C4256-10PSZ		15	5	
IC120,121	MB81256-10PSZ		12	4	
IC122-125	MB81464-10PSZ		15	4	
IC126,127	MB81256-10PSZ		12	4	
IC128	P8742AH		26,40	20	
IC129	SN7406NS		14	7	
IC131	DS1287		24	12	
IC132	SN74LS32NS		14	7	
IC133	VL16C452QC		23,40,64	2,7,9,22,27, 42,43,54,61	
IC134,135	MC1489AM		14	7	
IC136	MC1488M	14		7	1
IC144	SN74LS04NS		14	7	

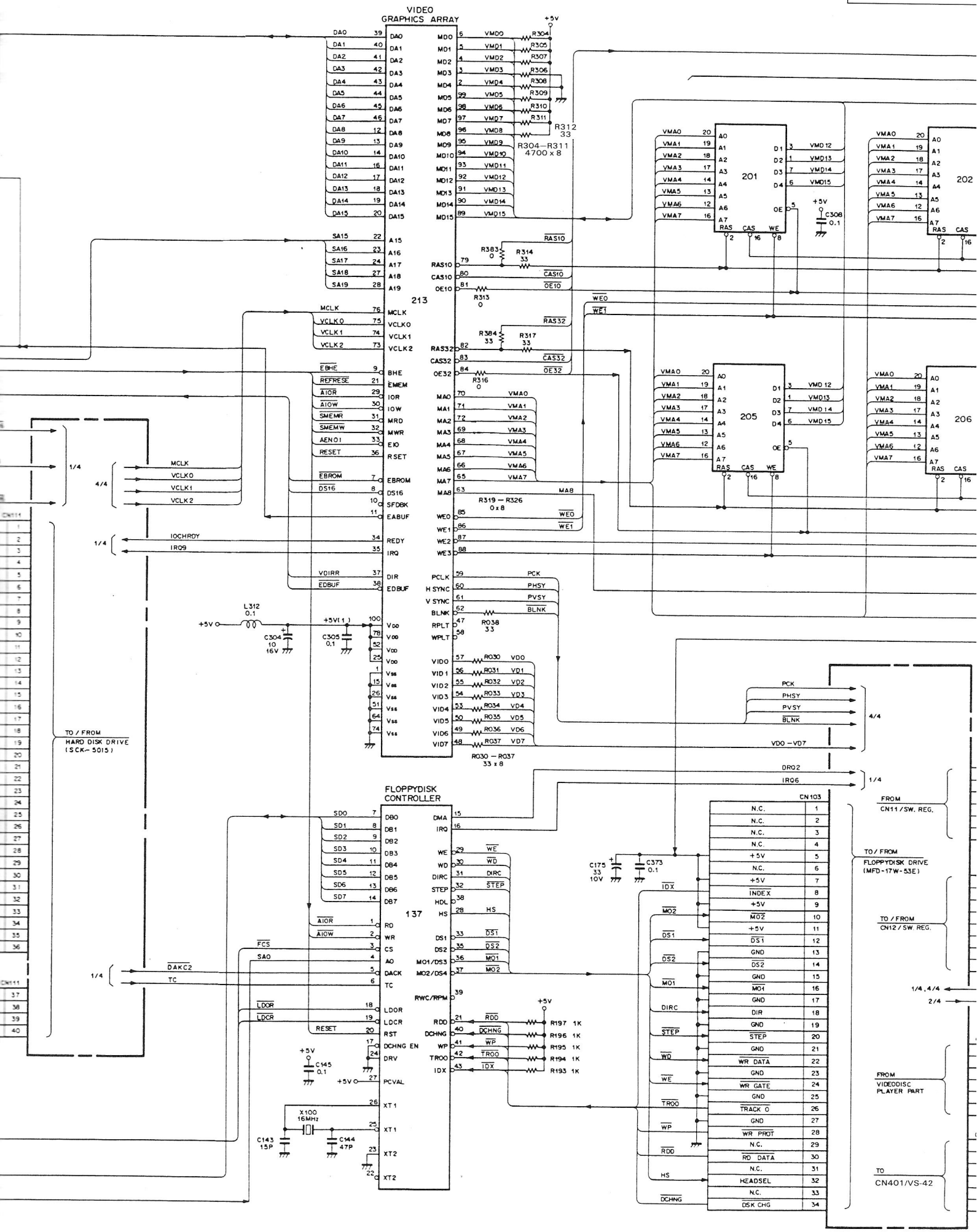


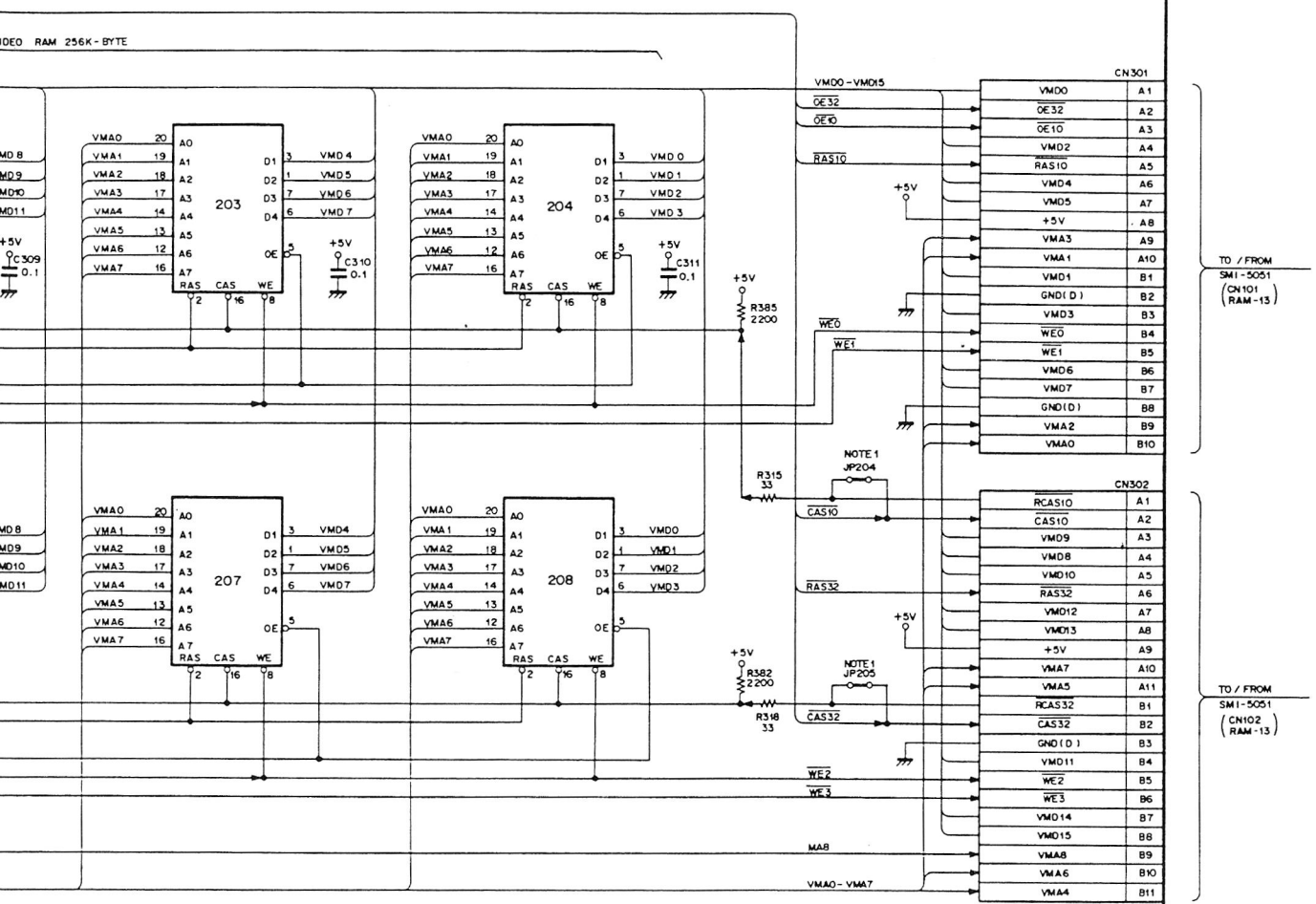
SY-143(2/4)

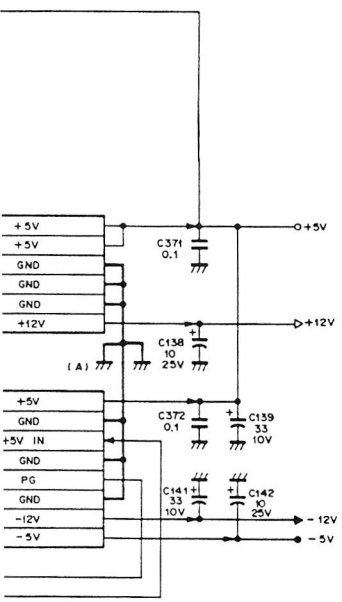
1-630-412-12

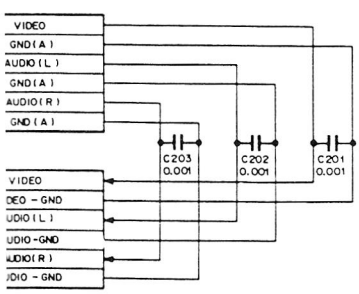
VIW-5600D(EK)


GATE ARRAY
141 (1/2)
GATE ARRAY
141 (2/2)
211
212
209
210
139
138
140
142
105
111
SD0 – SD15
SA0 – SA19
SA15 – SA19
EDBUF0
EDBUF1
VDIRW
C306 0.1
C307 0.1
C181 0.1
C146 0.1
R379 4700
R250 10K
R200
R201
R199
R202
R203
R198
R204
R205
R198 – R205 33 x 8
AENO1
REFRESH
RESET
IREG
SMEMR
SMEMW
EBHE
EDBUF
DS16
LA17 – LA23
HDIR
HG
HCS0
HCS1
HI16
IOR
AIOW
AIOR
BALE
CS HD
CSF
IOCS16
MCS16
IRQ14
CN111
HRESET
HD0 – HD15
HA0 – HA2
HIOW
HIOR
HALE
HCS0
HCS1
ACTIVE
TO / FROM HARD DISK DRIVE (SCK – SD15)
FCS
LDOR
LDCR
SA0 – SA2
SA0


VIDEO GRAPHICS ARRAY
213
201
202
205
206
R304–R311 4700 x 8
R312 33
R319 – R326 0 x 8
R030 – R037 33 x 8
FLOPPYDISK CONTROLLER
137
X100 16MHz
TO / FROM HARD DISK DRIVE (SCK-5015)
FROM CN11 / SW. REG.
TO / FROM FLOPPYDISK DRIVE (MFD-17W-53E)
TO / FROM CN12 / SW. REG.
FROM VIDEODISC PLAYER PART
TO CN401/VS-42
CN103







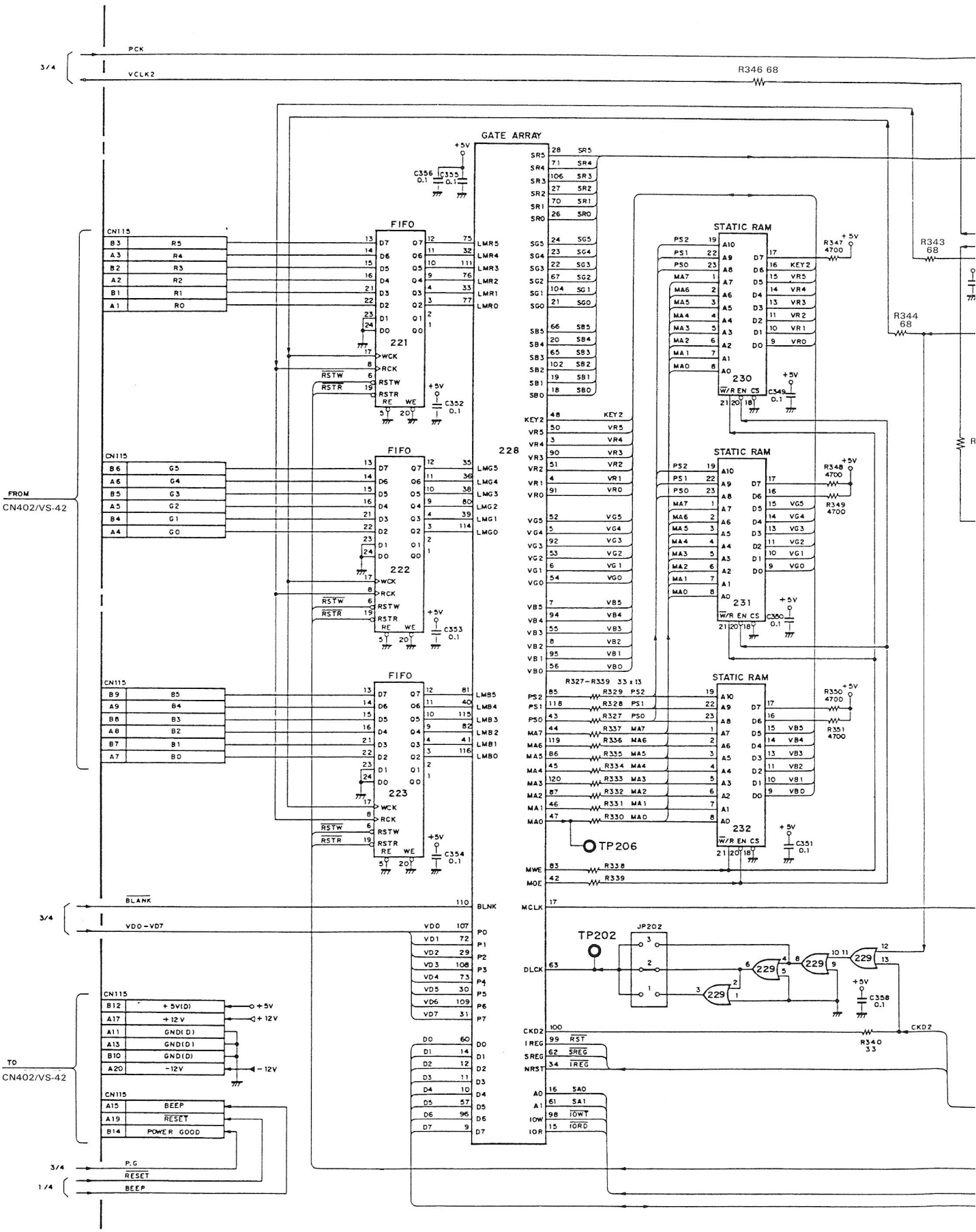
Note: 1. When installing the SMI-5051, remove JP204 and JP205.

REF. No.	TYPE	PIN No. +5V	+5V(1)	GND
IC105	75F04SJ	14		7
IC111	SN74ALS10ANS	14		7
IC137	WD37C65BJM	44		34
IC138,139	SN74LS245NS	20		10
IC140	SN74LS244NS	20		10
IC141	uPD65005GC-306-3B6	34		7,33
IC142	SN74LS126ANS	14		7
IC201-208	MB81464-10PSZ	15		4
IC209,210	SN74LS244NS	20		10
IC211,212	SN74LS245NS	20		10
IC213	PVGA1A		25,52, 78,100	1,15,26, 51,64,77

+5V ; DIGITAL +5V
+5V(1) ; DIGITAL +5V THROUGH L312, FOR IC213

GND ; DIGITAL GROUND
GND(A) ; ANALOG GROUND

SY-143 (3/4)
1-630-412-12
VIW-5600D(EK)


PCK
VCLK2
3/4
R346 68
GATE ARRAY
228
FIFO
221
222
223
CN115
FROM
CN402/VS-42
STATIC RAM
230
231
232
R327-R339 33 x 13
TP206
TP202
JP202
BLANK
VD0-VD7
TO
CN402/VS-42
+5V(D)
+12V
GND(D)
-12V
BEEP
RESET
POWER GOOD
P.G
1/4

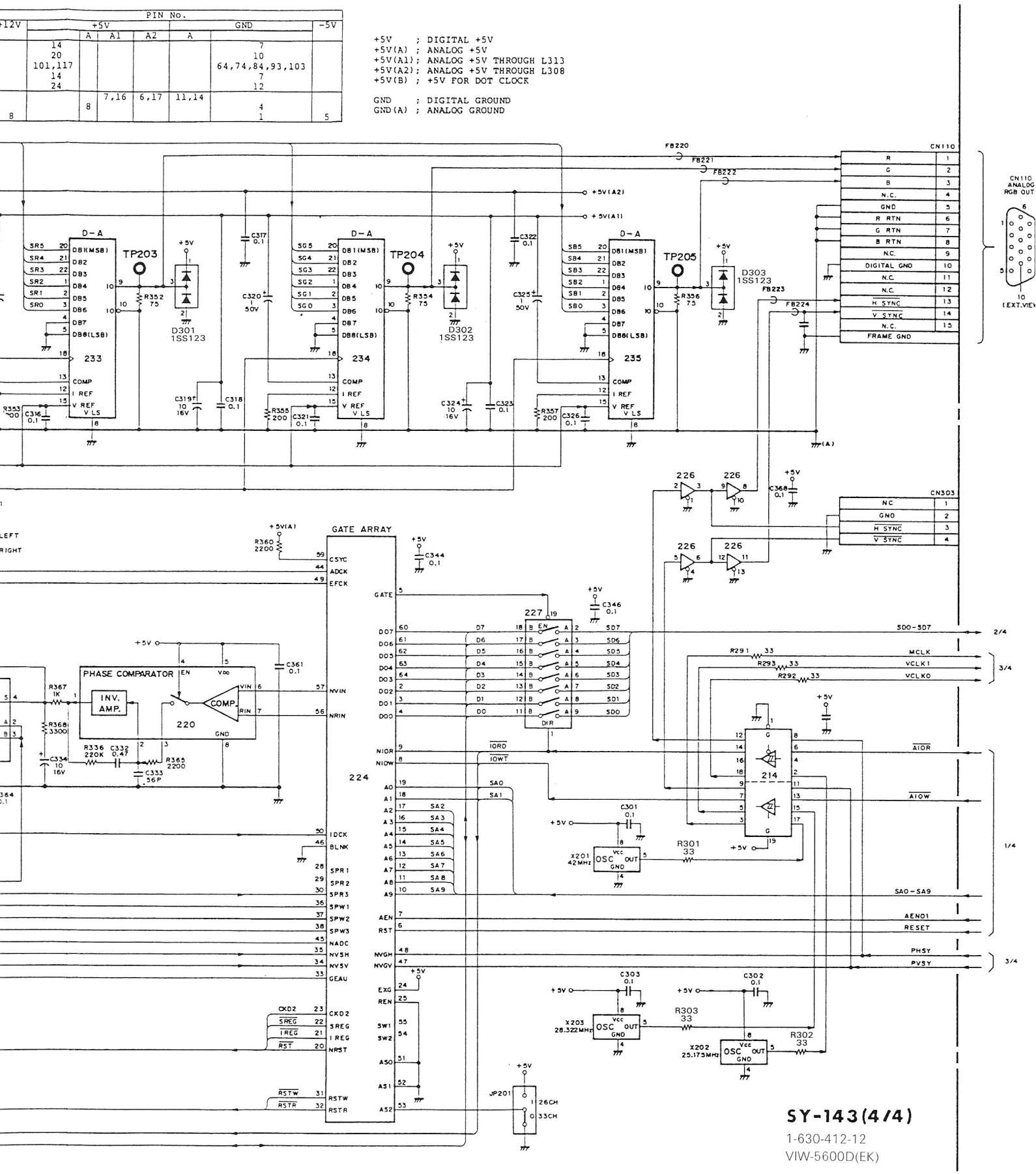
REF. No.	TYPE	+12V	PIN NO. +5V			GND
				B	A	
IC215	74F125SJ		20			10
IC217	74AC00SJ			14		7
IC218	RC78L05A	IN		OUT		GND
IC219	uPC358G2	8			4	
IC220	CX23065		5			8
IC221-223	uPD42102G-3		18			7
IC224	uPD65006GF-325-3B8		27			26,41,43,58
IC225	SN74F240NS		20			10

REF. No.	TY
IC226	SN74LS
IC227	SN74LS
IC228	uPD650
IC229	SN74AL
IC230-232	TMM201
IC233-235	uPD690
IC236	uPC358
IC240	TL601C

+12V	+5V				GND	-5V
		A	A1	A2	A	
	14 20 101,117 14 24					7 10 64,74,84,93,103 7 12
		8	7,16	6,17	11,14	4 1
8						5

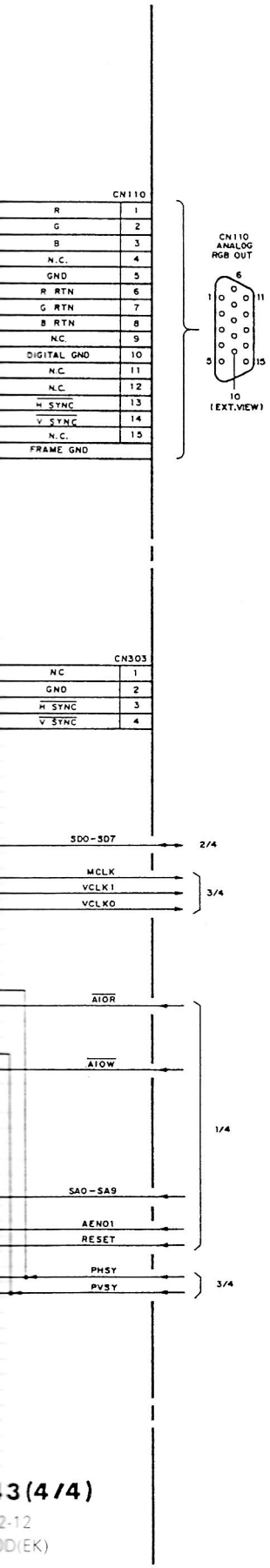
+5V ; DIGITAL +5V
+5V(A) ; ANALOG +5V
+5V(A1); ANALOG +5V THROUGH L313
+5V(A2); ANALOG +5V THROUGH L308
+5V(B) ; +5V FOR DOT CLOCK

GND ; DIGITAL GROUND
GND(A) ; ANALOG GROUND

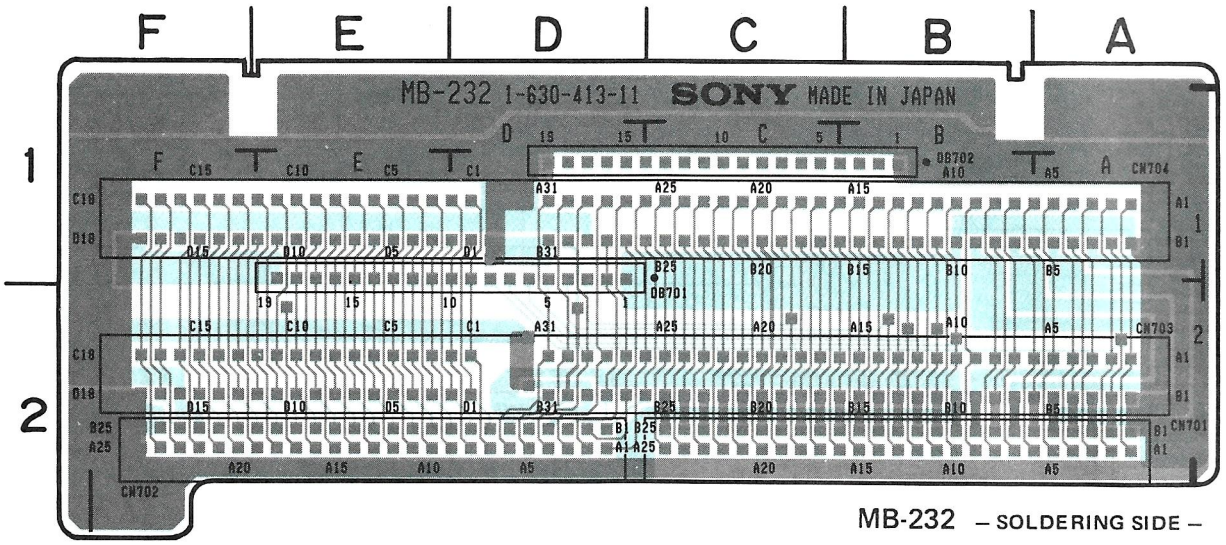


SY-143(4/4)

1-630-412-12
VIW-5600D(EK)

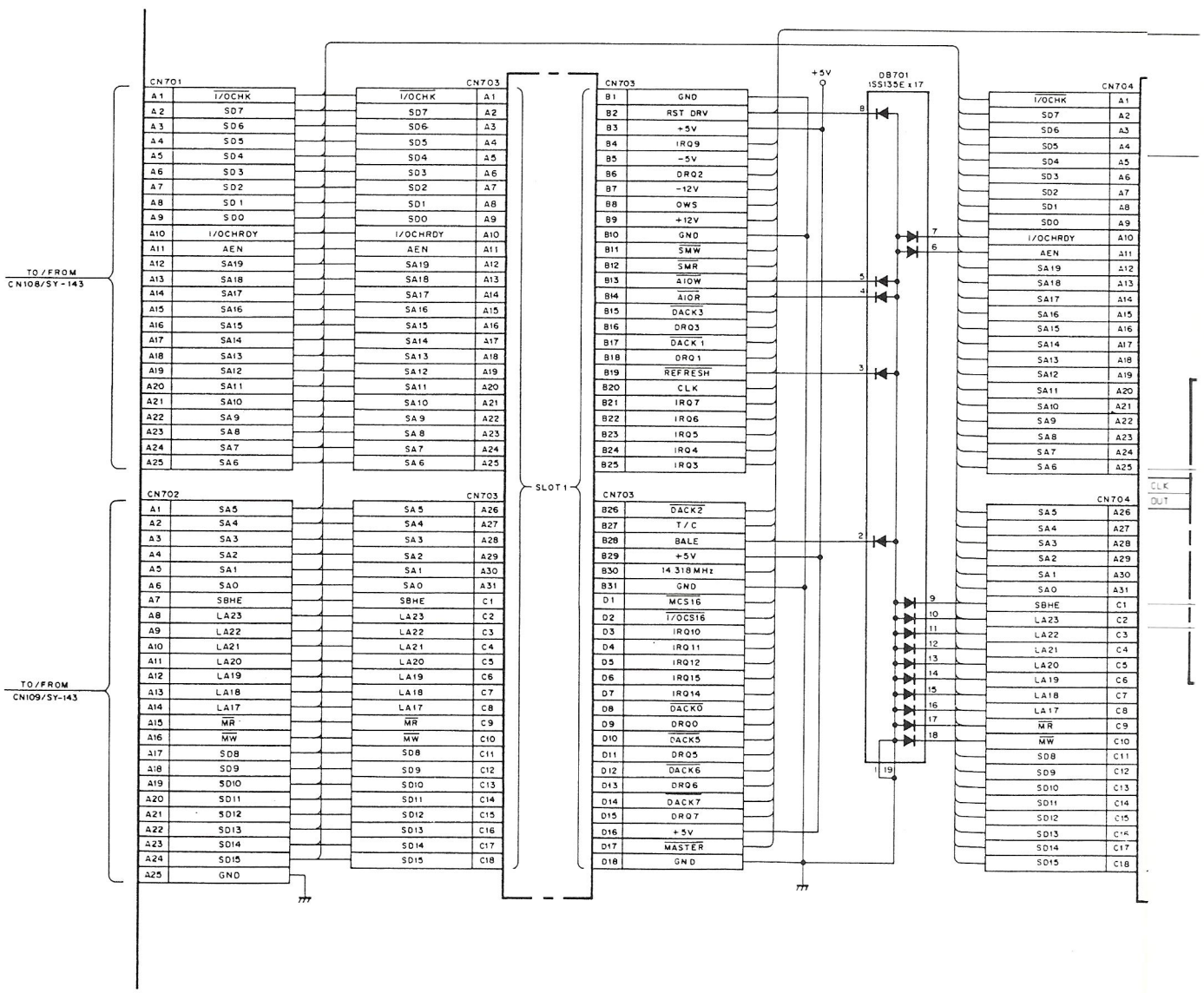

CN110
R 1
G 2
B 3
N.C. 4
GND 5
R RTN 6
G RTN 7
B RTN 8
N.C. 9
DIGITAL GND 10
N.C. 11
N.C. 12
H SYNC 13
V SYNC 14
N.C. 15
FRAME GND
CN110
ANALOG
RGB OUT
6
1
11
5
15
10
(EXT.VIEW)
CN303
NC 1
GND 2
H SYNC 3
V SYNC 4
SD0-SD7
2/4
MCLK
VCLK1
VCLK0
3/4
AIOR
AIOW
1/4
SA0-SA9
AENO1
RESET
PHSY
PVSY
3/4

5-3. MB-232 BOARD



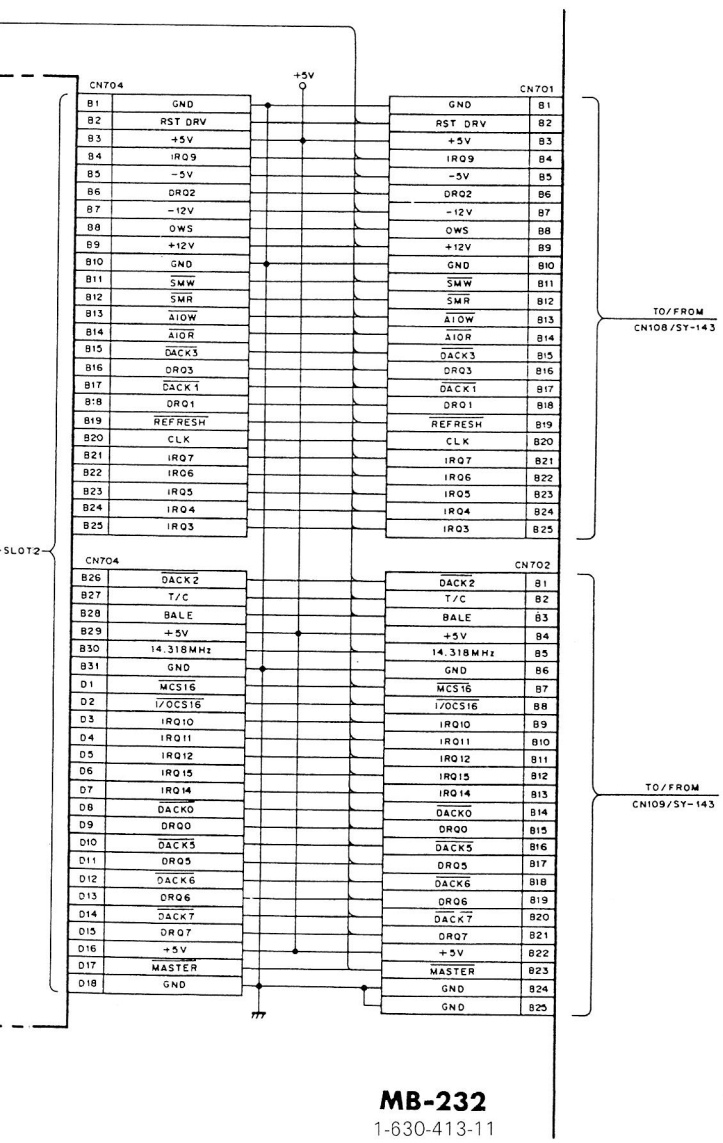
MB-232 – SOLDERING SIDE –

1-630-413-11
VIW-5600D(EK)



N701 A-2
N702 F-2
N703 A-2
N704 A-1

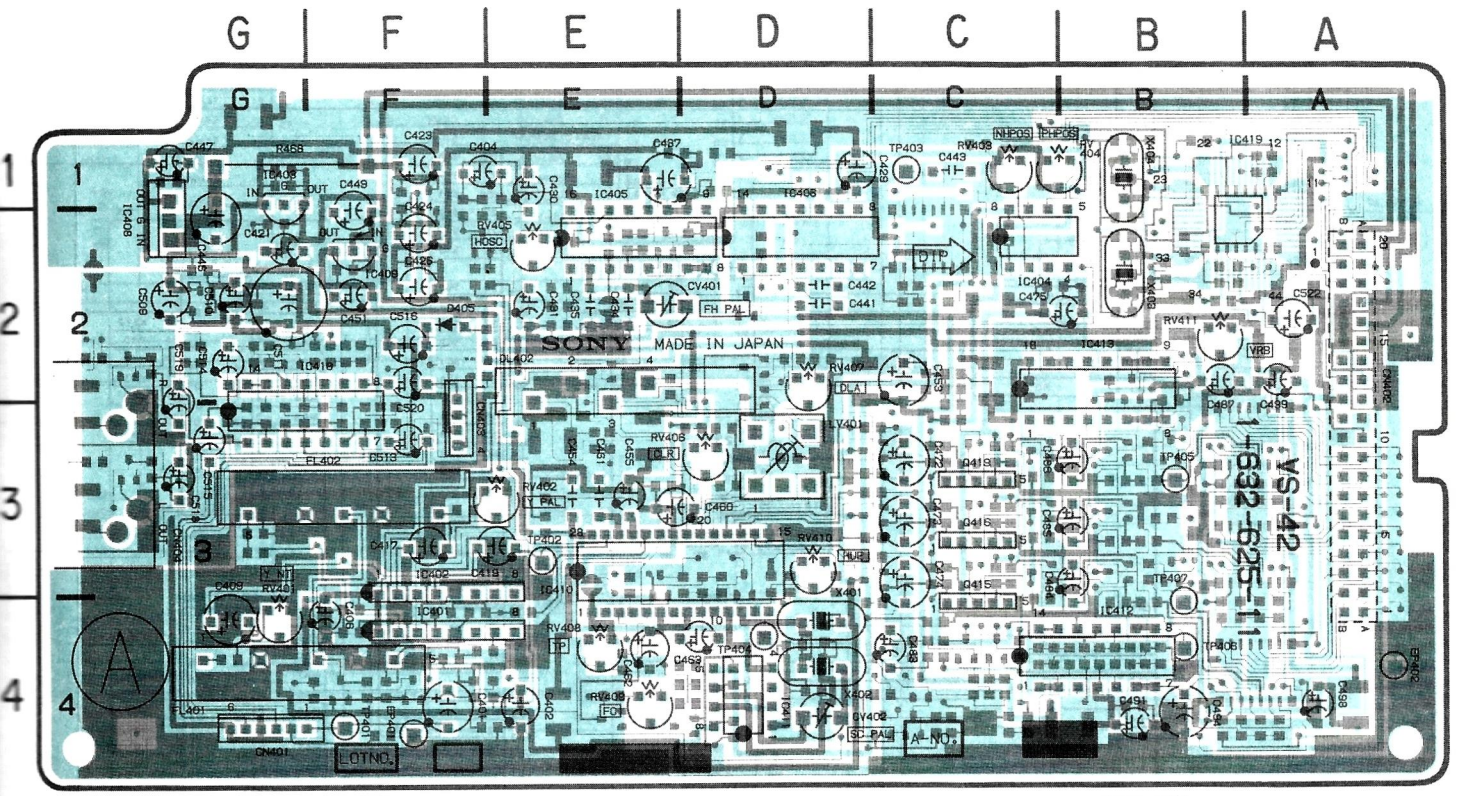
B701 C-2
B702 B-1



MB-232
1-630-413-11
VIW-5600D(EK)

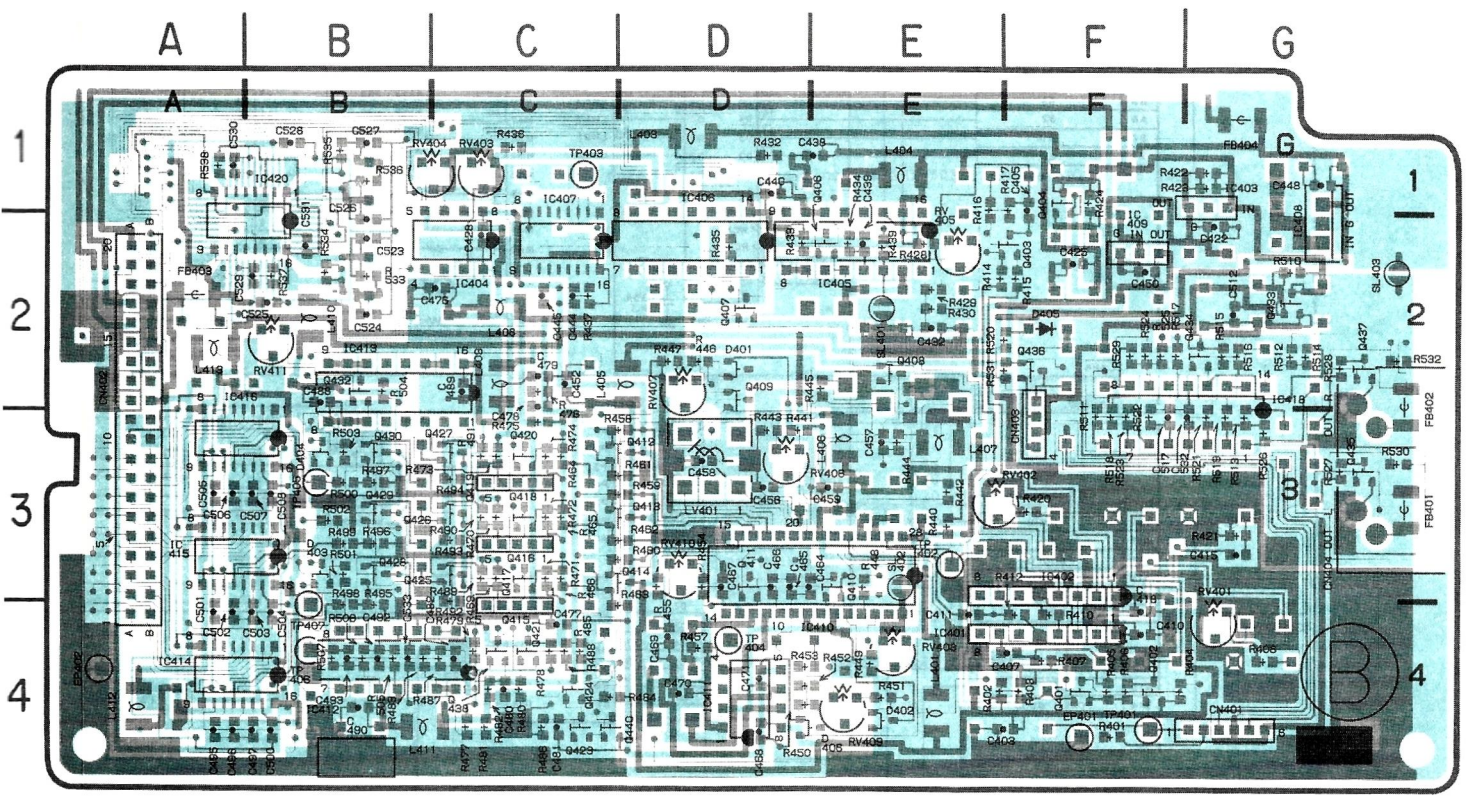
5-4. VS-42 BOARD

C401	F-4	C491	B-4	IC412	B-4	*R429	E-2	*R516	G-2
C402	E-4	*C492	B-4	IC413	B-2	*R430	E-2	*R517	F-2
*C403	E-4	*C493	B-4	*IC414	A-4	*R432	D-1	*R518	F-3
C404	F-1	C494	B-4	*IC415	B-3	*R433	D-2	*R519	G-3
*C405	F-1	*C495	A-4	*IC416	B-3	*R434	E-2	*R520	F-2
C406	F-4	*C496	A-4	*IC418	G-2	*R435	D-2	*R521	G-3
*C407	F-4	*C497	A-4	IC419	B-2	*R436	C-1	*R522	F-3
C409	G-4	C498	A-4	*IC420	B-2	*R437	C-2	*R523	F-3
*C410	F-4	C499	A-2			*R439	E-2	*R524	F-2
*C411	E-4	*C500	A-4	*L401	E-4	*R440	E-3	*R525	F-2
*C415	G-3	*C501	A-4	*L403	D-1	*R441	D-3	*R526	G-3
C417	F-3	*C502	A-4	*L404	E-1	*R442	E-3	*R527	G-3
*C418	F-4	*C503	A-4	*L405	D-2	*R443	D-3	*R528	G-2
C419	E-3	*C504	B-4	*L406	E-3	*R444	E-3	*R529	F-2
C421	G-2	*C505	A-3	*L407	E-3	*R445	E-2	*R530	G-3
*C422	G-2	C506	A-3	*L408	C-2	*R446	D-2	*R531	F-2
C423	F-1	*C507	B-4	*L409	C-2	*R447	D-2	*R32	G-2
C424	F-2	C508	B-3	*L410	B-2	*R448	E-3	*R533	B-2
*C425	F-2	C509	G-2	*L411	B-4	*R449	E-4	*R534	B-2
C426	F-2	C510	G-2	*L412	A-4	*R450	D-4	*R535	B-1
*C428	C-2	C511	G-2	*L413	A-2	*R451	E-4	*R536	B-1
C429	D-1	*C512	G-2			*R452	D-4	*R537	B-2
C430	E-1	C513	F-3	LV401	D-3	*R453	D-4		
C431	E-2	C514	G-2			*R454	D-3	RV405	E-2
*C432	E-2	C515	G-3	*Q401	F-4	*R455	D-3	RV401	G-4
C434	E-2	C516	F-2	*Q402	F-4	*R457	D-4	RV402	E-3
C435	E-2	*C517	F-3	*Q403	F-2	*R458	D-3	RV403	C-1
C437	E-1	C518	G-3	*Q404	F-1	*R459	D-3	RV404	C-1
*C438	E-1	C519	G-2	*Q406	E-2	*R460	D-3	RV406	D-3
*C439	E-2	C520	F-2	*Q407	D-2	*R461	D-3	RV407	D-2
C440	D-1	C522	A-2	*Q408	E-2	*R462	D-3	RV408	E-4
C441	D-2	*C523	B-2	*Q409	D-2	*R463	D-3	RV409	E-4
C442	D-2	*C524	B-2	*Q410	E-3	*R464	C-3	RV410	D-3
C443	C-1	*C525	B-2	*Q411	D-3	*R465	C-3	RV411	B-2
*C444	C-2	*C526	B-2	*Q412	D-3	*R466	C-3		
*C445	C-2	*C527	B-1	*Q413	D-3	R468	G-1	*SL403	G-2
C446	G-2	*C528	B-1	*Q414	D-3	*R469	C-3		
C447	G-1	*C529	B-2	Q415	C-4	*R470	C-3	TP401	F-4
*C448	G-1	*C531	B-2	Q416	C-3	*R471	C-3	TP402	E-3
C449	F-1	*C532	F-3	*Q417	C-3	*R472	C-3	TP403	C-1
*C450	F-2	*C533	B-4	*Q418	C-3	*R473	C-3	TP404	D-4
C451	F-2	C534	B-2	Q419	C-3	*R474	C-3	TP405	B-3
*C452	C-2	CN401	G-4	*Q420	C-3	*R475	C-3	TP406	B-4
C453	C-2	CN402	A-2	*Q421	C-4	*R476	C-2	TP407	B-4
C454	E-3	CN403	F-3			*R477	C-4		
C455	E-3	CN404	G-3	*Q423	C-4	*R478	C-4	X401	D-4
*C456	D-3			*Q424	C-4	*R479	C-4	X402	D-4
*C457	E-3	CV401	E-2	*Q425	C-3	*R480	C-4	X403	B-2
*C458	D-3	CV402	D-4	*Q426	C-3	*R481	C-4	X404	B-1
*C459	E-3			*Q427	C-3	*R482	C-4		
C460	E-3	*D401	D-2	*Q428	B-3	*R483	B-4		
C461	E-3	*D402	E-4	*Q429	B-3	*R484	C-4	*:	
C462	E-4	*D403	B-3	*Q430	B-3	*R485	C-4	SOLDERING SIDE	
C463	D-4	*D404	B-3	*Q433	G-2	*R486	C-4		
*C464	D-3	D405	F-2	*Q434	G-2	*R487	C-4		
*C465	D-3	*D406	E-4	*Q435	G-3	*R488	C-4		
*C466	D-3			*Q436	F-2	*R489	C-3		
*C467	D-3	DL402	E-2	*Q437	G-2	*R490	C-3		
C468	D-4			*Q438	C-4	*R491	C-3		
*C469	D-4	EP401	F-4	*Q440	C-4	*R492	C-4		
C470	D-4	EP402	A-4			*R493	C-3		
*C471	D-4			*R401	F-4	*R494	C-3		
C472	C-3	*FB401	G-3	*R402	E-4	*R495	B-4		
C473	C-3	*FB402	G-2	*R403	F-4	*R496	B-3		
C474	C-3	FB403	A-2	*R404	F-4	*R497	B-3		
C475	C-2	FB404		*R405	F-4	*R498	B-4		
C476	C-2			*R406	F-4	*R499	B-3		
*C477	C-4	FL401		*R407	F-4	*R500	B-3		
*C478	C-3	FL402	F-3	*R408	G-4	*R501	B-3		
*C479	C-2			*R410	F-4	*R502	B-3		
*C480	C-4	IC401	F-4	*R412	F-4	*R503	B-3		
*C481	C-4	IC402	F-3	*R414	E-2	*R504	B-2		
C482	C-3	IC403	G-1	*R415	F-2	*R505	B-4		
C483	C-4	IC404	C-2	*R416	E-2	*R506	B-4		
C484	B-3	IC405	E-2	*R417	F-1	*R507	B-4		
C485	B-3	IC406	D-2	*R420	F-3	*R510	G-2		
C486	B-3	*IC407	C-2	*R421	G-3	*R511	F-3		
C487	B-2	IC408	G-2	*R422	G-1	*R512	G-2		
*C488	B-2	IC409	F-2	*R423	G-1	*R513	G-3		
*C489	C-2	IC410	E-3	*R424	F-1	*R514	G-2		
*C490	B-4	IC411	D-4	*R428	E-2	*R515	G-2		



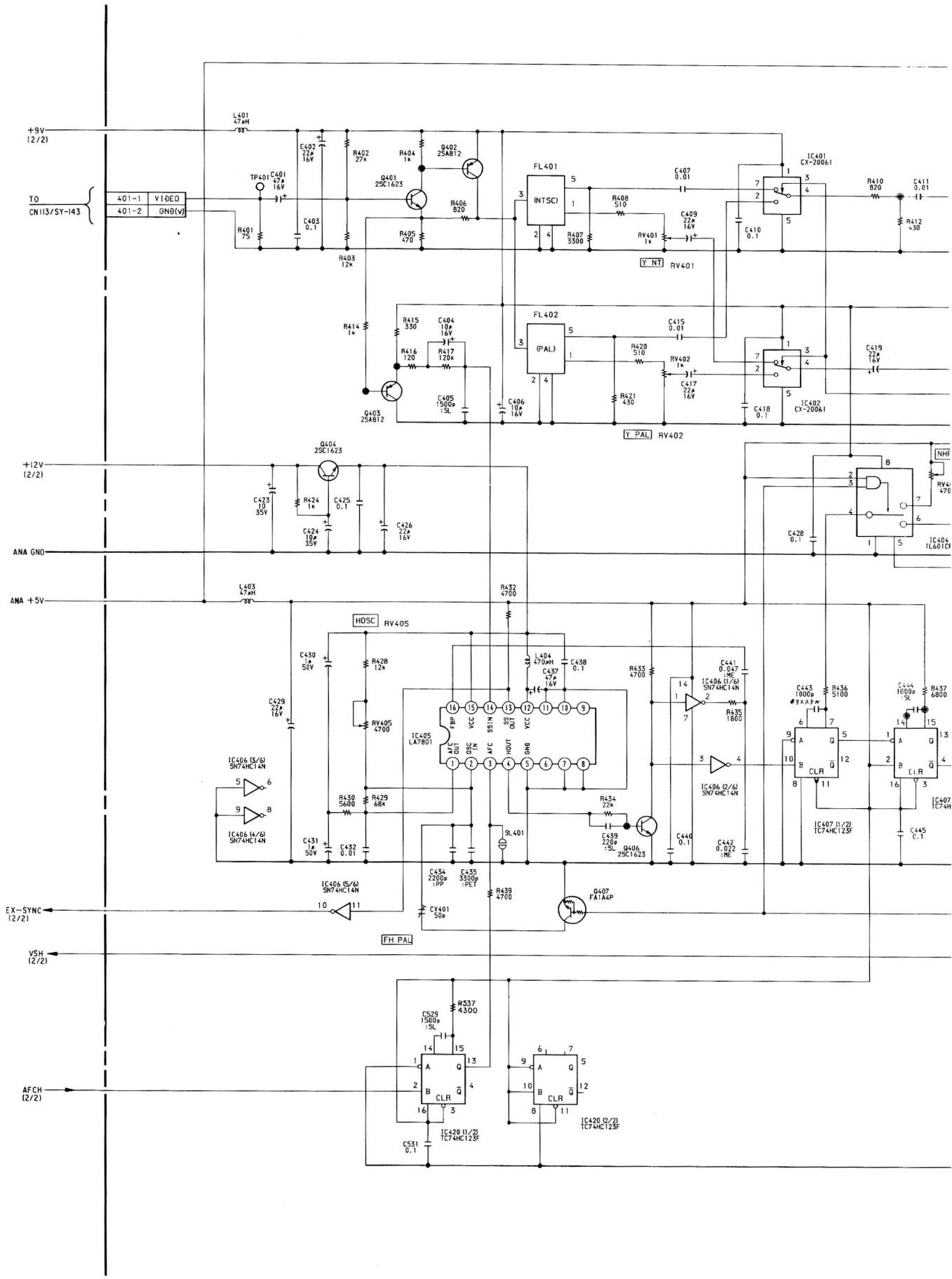
VS-42 – COMPONENT SIDE –

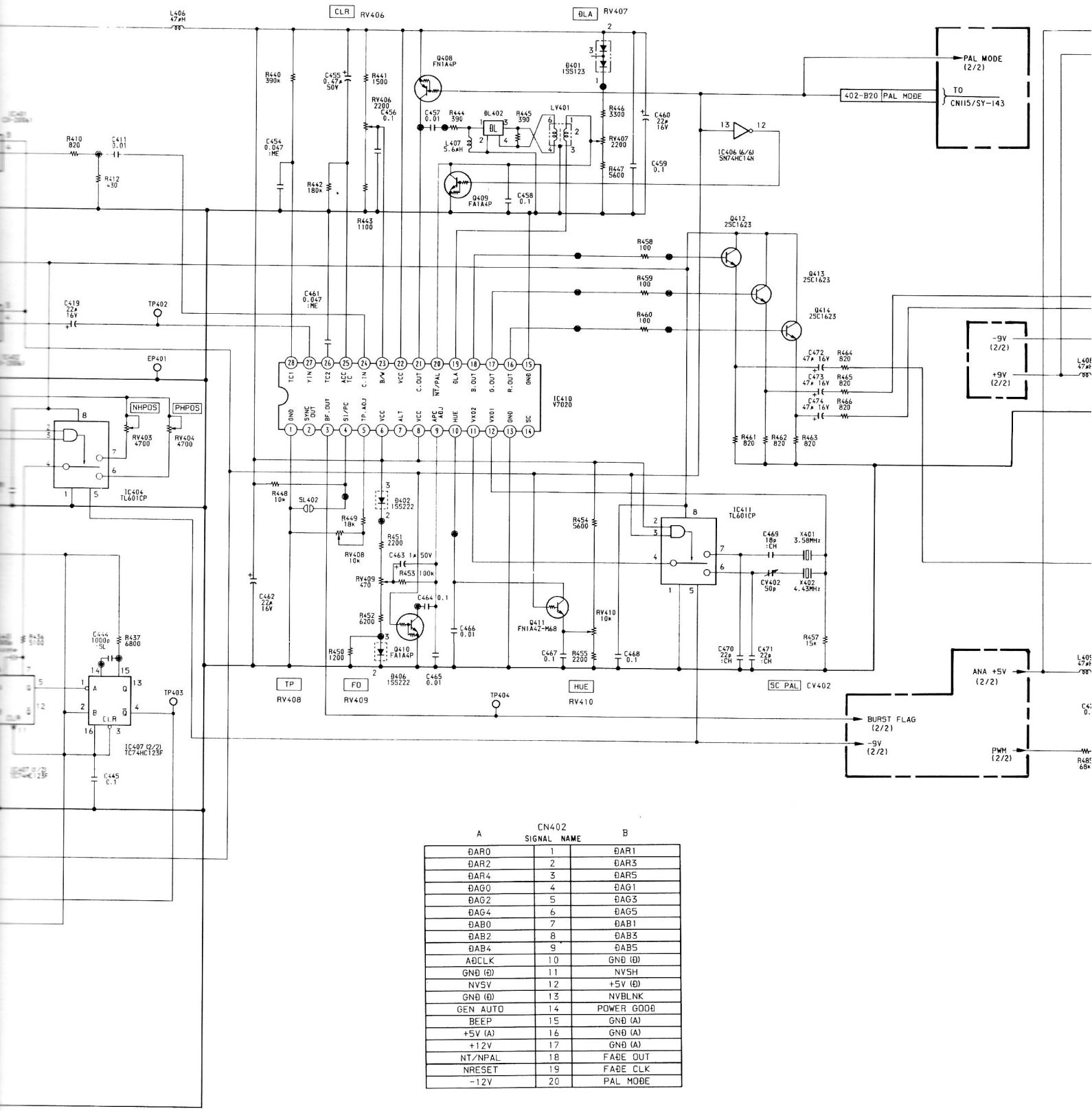
1-632-625-11
VIW-5600D(EK)



VS-42 – SOLDERING SIDE –

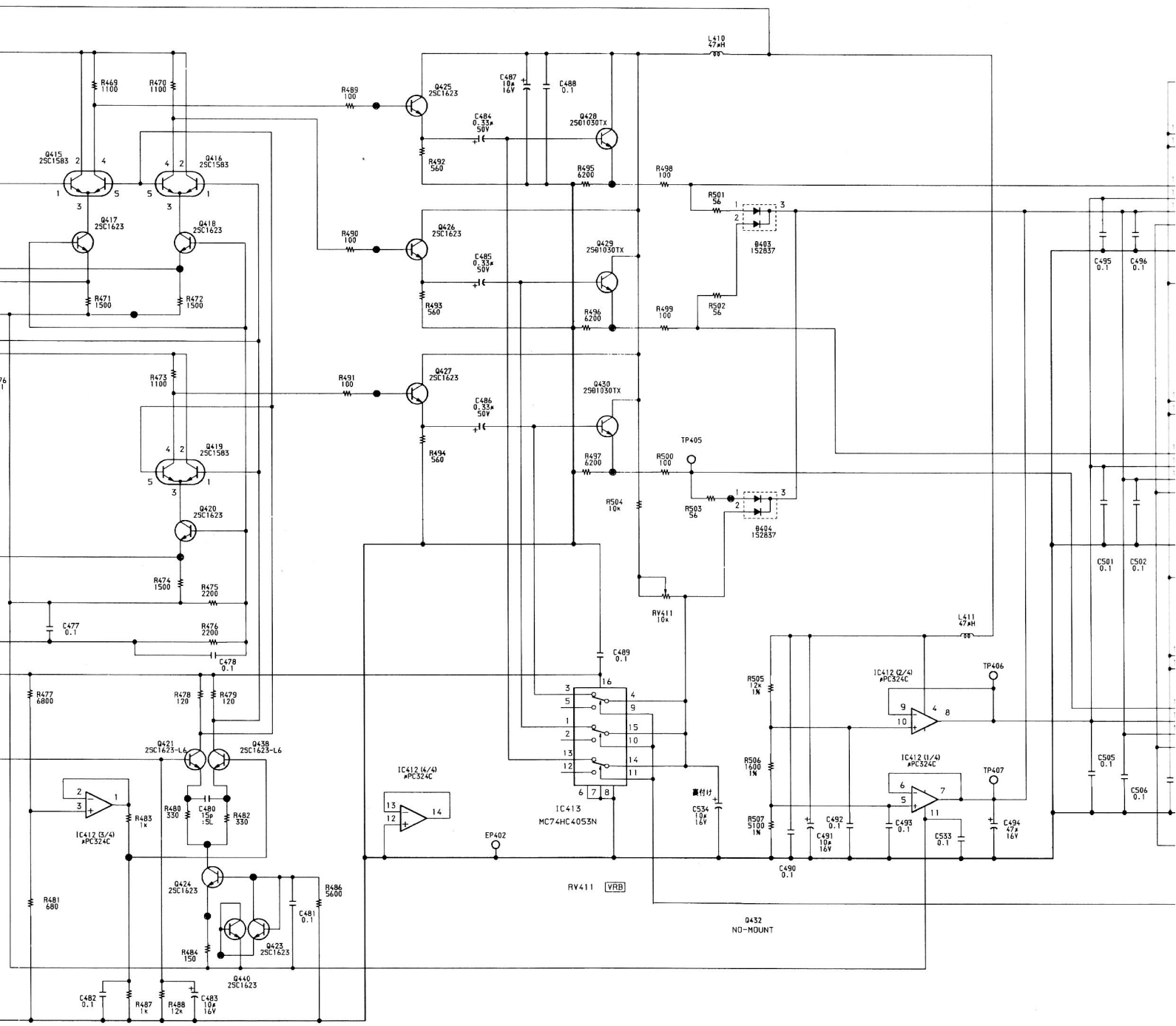
1-632-625-11
VIW-5600D(EK)

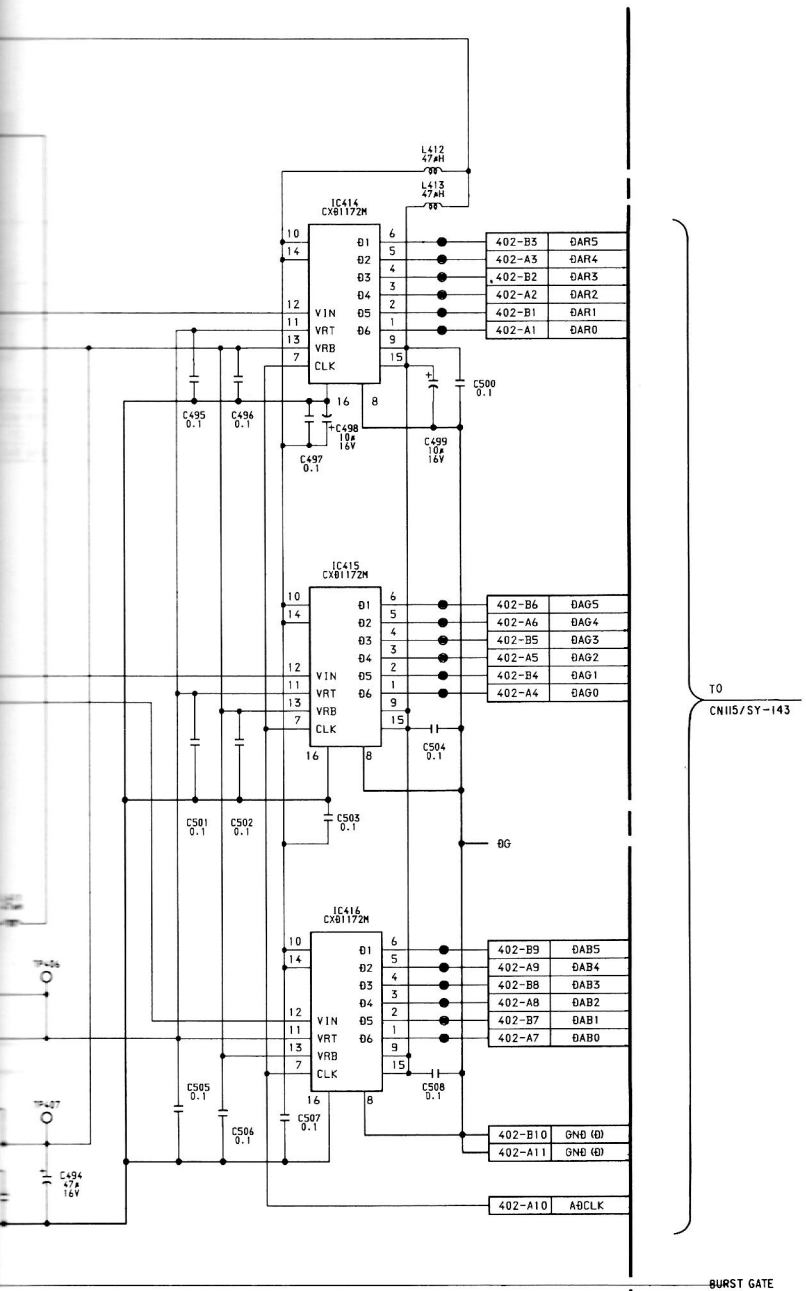

+9V (2/2)
TO CN113/SY-143
401-1 VIDEO
401-2 GND(V)
L401 47μH
TP401
C401 47μ 16V
C402 22μ 16V
C403 0.1
R401 75
R402 27k
R403 12k
R404 1k
R405 470
R406 820
Q401 2SC1623
Q402 2SA812
FL401
(NTSC)
R407 3300
R408 510
C407 0.01
RV401 1k
C409 22μ 16V
IC401 CX-20061
C410 0.1
R410 820
C411 0.01
R412 430
Y NT RV401
R414 1k
R415 330
C404 10μ 16V
R416 120
R417 120k
C405 1500p :SL
Q403 2SA812
C406 10μ 16V
FL402
(PAL)
R420 510
R421 430
C415 0.01
RV402 1k
C417 22μ 16V
IC402 CX-20061
C418 0.1
C419 22μ 16V
Y PAL RV402
+12V (2/2)
Q404 2SC1623
C423 10 35V
R424 1k
C424 10μ 35V
C425 0.1
C426 22μ 16V
ANA GND
C428 0.1
ANA +5V
L403 47μH
R432 4700
HOSC RV405
C430 1μ 50V
R428 12k
C429 22μ 16V
RV405 4700
L404 470μH
C438 0.1
C437 47μ 16V
IC405 LA7801
FBP VCC SSIN SSOUT VCC
AFC OUT OSC IN AFC HOUT GND
R433 4700
C441 0.047 :ME
IC406 (1/6) SN74HC14N
R435 1800
C443 1000p :ポリエステル
R436 5100
C444 1000p :SL
R437 6800
IC406 (3/6) SN74HC14N
IC406 (4/6) SN74HC14N
IC406 (2/6) SN74HC14N
R430 5600
R429 68k
C431 1μ 50V
C432 0.01
R434 22k
C439 220p :SL
Q406 2SC1623
SL401
C440 0.1
C442 0.022 :ME
IC407 (1/2) TC74HC123F
C445 0.1
IC406 (5/6) SN74HC14N
C434 2200p :PP
C435 3300p :PET
R439 4700
Q407 FA1A4P
CV401 50p
EX-SYNC (2/2)
FH PAL
VSH (2/2)
C529 1500p :SL
R537 4300
IC420 (1/2) TC74HC123F
C531 0.1
IC420 (2/2) TC74HC123F
AFCH (2/2)



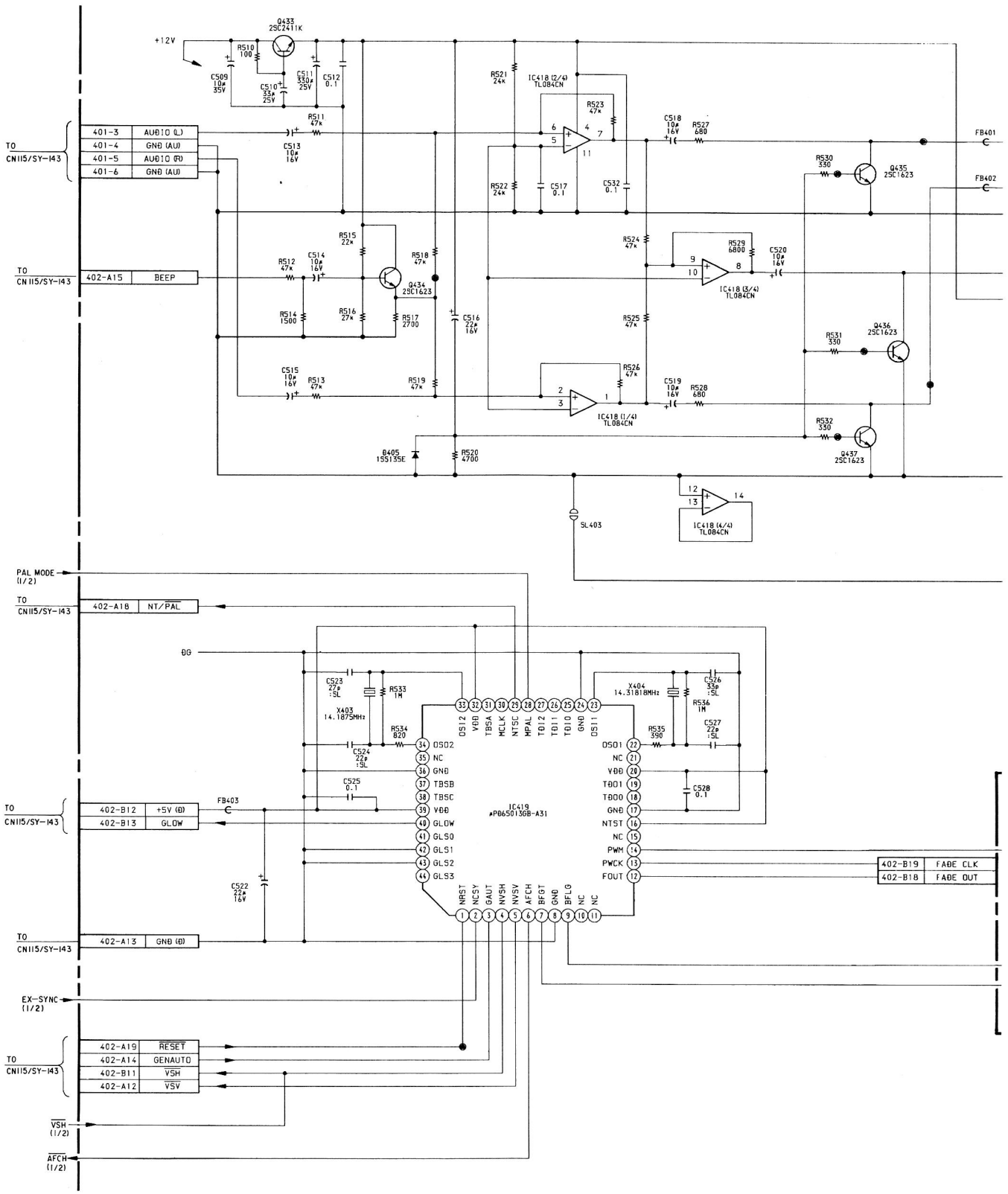
CN402

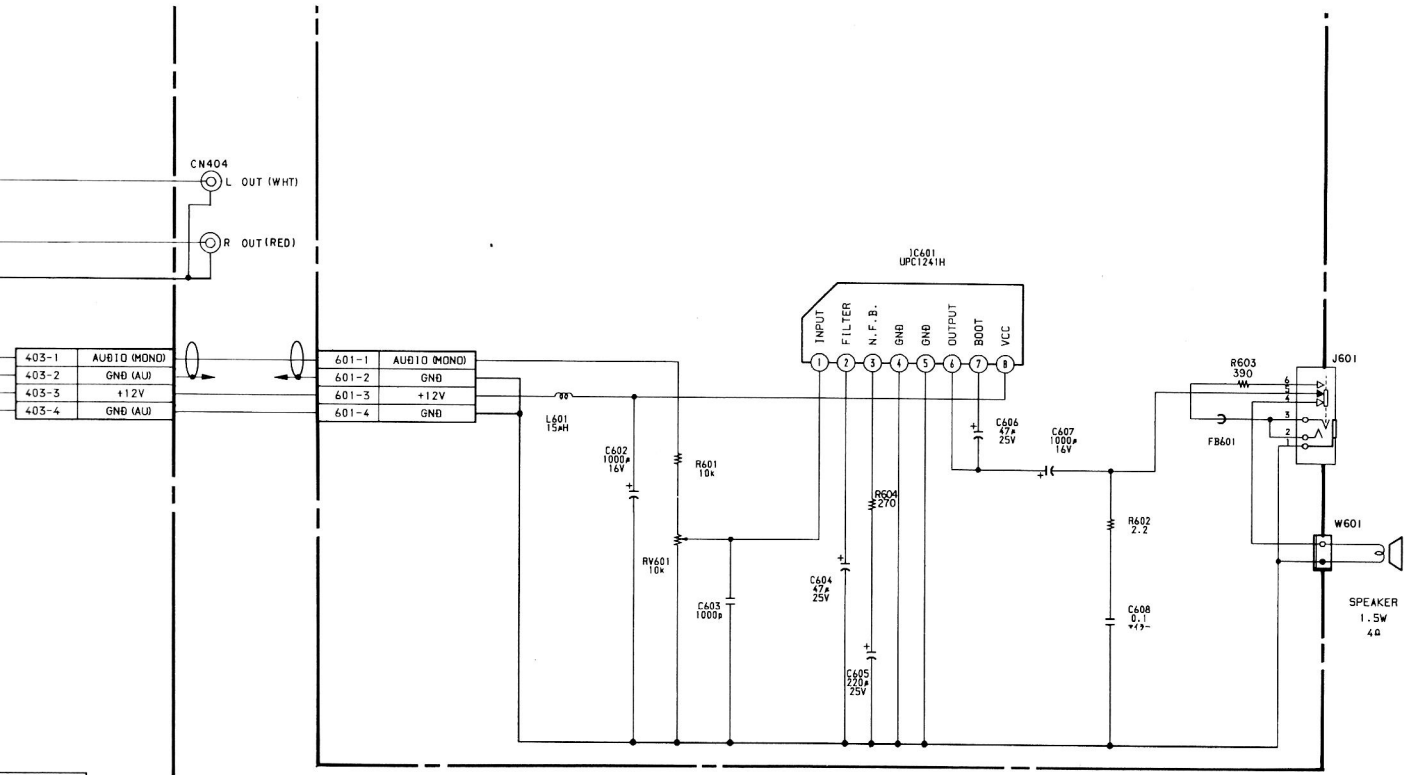
A	SIGNAL NAME	B
ĐAR0	1	ĐAR1
ĐAR2	2	ĐAR3
ĐAR4	3	ĐAR5
ĐAG0	4	ĐAG1
ĐAG2	5	ĐAG3
ĐAG4	6	ĐAG5
ĐAB0	7	ĐAB1
ĐAB2	8	ĐAB3
ĐAB4	9	ĐAB5
AĐCLK	10	GNĐ (Đ)
GNĐ (Đ)	11	NVSH
NVSV	12	+5V (Đ)
GNĐ (Đ)	13	NVBLNK
GEN AUTO	14	POWER GOOĐ
BEEP	15	GNĐ (A)
+5V (A)	16	GNĐ (A)
+12V	17	GNĐ (A)
NT/NPAL	18	FAĐE OUT
NRESET	19	FAĐE CLK
-12V	20	PAL MOĐE


L410 47μH
R469 1100
R470 1100
R489 100
Q425 2SC1623
C487 10μ 16V
C488 0.1
C484 0.33μ 50V
Q428 2SD1030TX
Q415 2SC1583
Q416 2SC1583
R492 560
R495 6200
R498 100
R501 56
D403 1S2837
Q417 2SC1623
Q418 2SC1623
R490 100
Q426 2SC1623
C485 0.33μ 50V
Q429 2SD1030TX
R471 1500
R472 1500
R493 560
R496 6200
R499 100
R502 56
C495 0.1
C496 0.1
R473 1100
R491 100
Q427 2SC1623
Q430 2SD1030TX
C486 0.33μ 50V
Q419 2SC1583
R494 560
R497 6200
R500 100
TP405
R504 10k
R503 56
D404 1S2837
Q420 2SC1623
C501 0.1
C502 0.1
R474 1500
R475 2200
RV411 10k
C477 0.1
R476 2200
C478 0.1
L411 47μH
C489 0.1
R505 12k 1%
IC412 (2/4) μPC324C
TP406
R477 6800
R478 120
R479 120
R506 1600 1%
IC412 (1/4) μPC324C
TP407
Q421 2SC1623-L6
Q438 2SC1623-L6
C505 0.1
C506 0.1
IC412 (4/4) μPC324C
IC413 MC74HC4053N
R480 330
C480 15p :SL
R482 330
R483 1k
IC412 (3/4) μPC324C
C534 10μ 16V
R507 5100 1%
C492 0.1
C491 10μ 16V
C493 0.1
C533 0.1
C494 47μ 16V
EP402
C490 0.1
RV411 VRB
R481 680
Q424 2SC1623
R486 5600
C481 0.1
R484 150
Q423 2SC1623
Q432 NO-MOUNT
Q440 2SC1623
C482 0.1
R487 1k
R488 12k
C483 10μ 16V

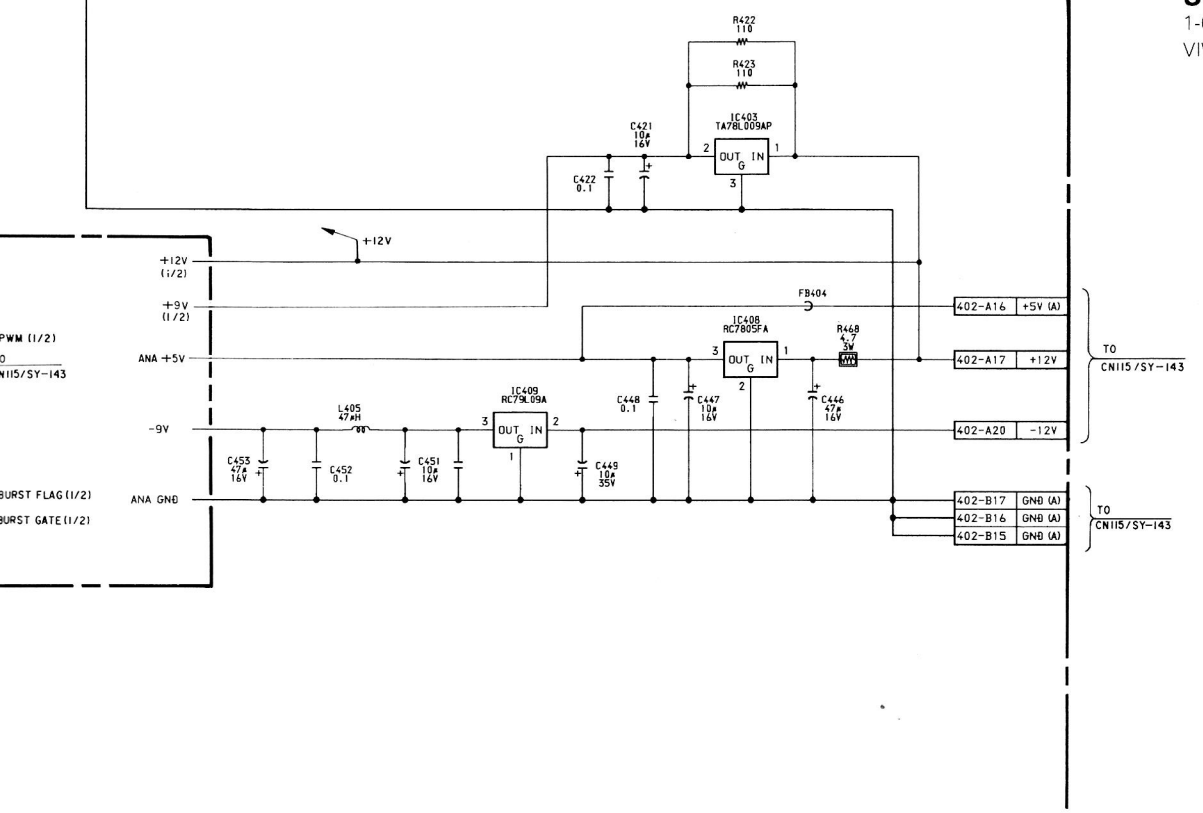


VS-42(1/2)
1-632-625-11
VIW-5600D(EK)


+12V
Q433 2SC2411K
R510 100
C509 10µ 35V
C510 33µ 25V
C511 330µ 25V
C512 0.1
R511 47k
C513 10µ 16V
TO CN115/SY-143
401-3 AUDIO (L)
401-4 GND (AU)
401-5 AUDIO (R)
401-6 GND (AU)
R521 24k
IC418 (2/4) TL084CN
R523 47k
R522 24k
C517 0.1
C532 0.1
C518 10µ 16V
R527 680
FB401
FB402
R530 330
Q435 2SC1623
R524 47k
R529 6800
C520 10µ 16V
IC418 (3/4) TL084CN
R525 47k
R531 330
Q436 2SC1623
R526 47k
C519 10µ 16V
R528 680
IC418 (1/4) TL084CN
R532 330
Q437 2SC1623
R515 22k
R518 47k
C514 10µ 16V
R512 47k
Q434 2SC1623
R514 1500
R516 27k
R517 2700
C516 22µ 16V
C515 10µ 16V
R513 47k
R519 47k
TO CN115/SY-143
402-A15 BEEP
D405 1SS135E
R520 4700
SL403
IC418 (4/4) TL084CN
PAL MODE (1/2)
TO CN115/SY-143
402-A18 NT/PAL
ØG
C523 27p SL
X403 14.1875MHz
R533 1M
R534 820
C524 22p SL
C525 0.1
X404 14.31818MHz
C526 33p SL
R536 1M
R535 390
C527 22p SL
C528 0.1
IC419 µPD650136B-A31
OSD2
NC
GNØ
TBSB
TBSC
VØØ
GLOW
GLS0
GLS1
GLS2
GLS3
OSI2
VØØ
TBSA
MCLK
NTSC
MPAL
TDI2
TDI1
TDI0
GNØ
OSI1
OSO1
NC
VØØ
TØO1
TØO0
GNØ
NTST
NC
PWM
PWCK
FOUT
NRST
NCSY
GAUT
NVSH
NVSV
AFCH
BFGT
GNØ
BFLG
NC
NC
TO CN115/SY-143
402-B12 +5V (Ø)
402-B13 GLOW
FB403
C522 22µ 16V
TO CN115/SY-143
402-A13 GND (Ø)
402-B19 FADE CLK
402-B18 FADE OUT
EX-SYNC (1/2)
TO CN115/SY-143
402-A19 RESET
402-A14 GENAUTO
402-B11 VSH
402-A12 VSV
VSH (1/2)
AFCH (1/2)

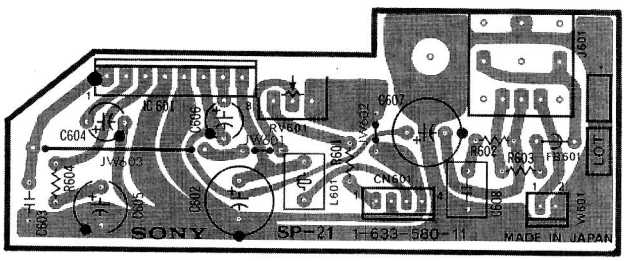


SP-21
1-633-580-11
VIW-5600D(EK)



VS-42(2/2)
1-632-625-11
VIW-5600D(EK)

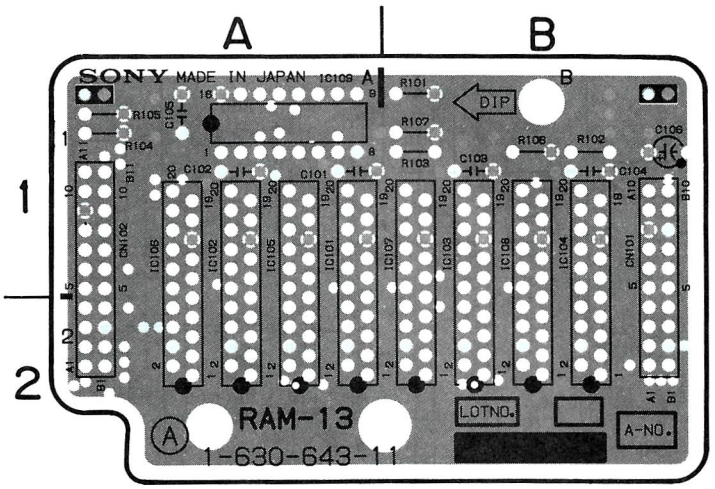
5-5. SP-21 BOARD



SP-21 – COMPONENT SIDE –

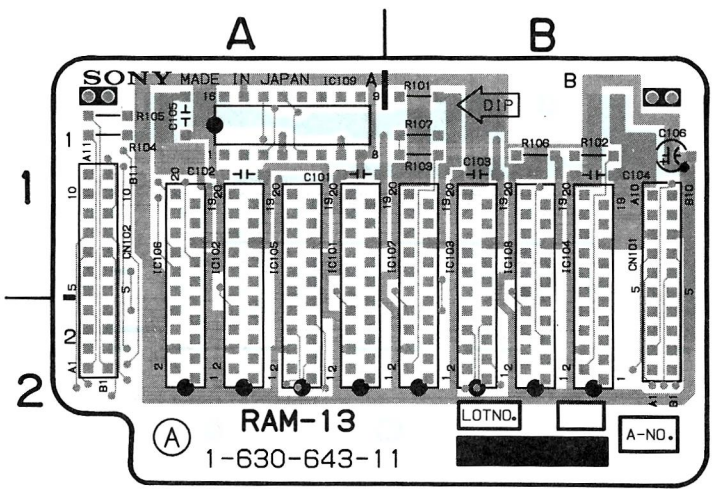
1-633-580-11
VIW-5600D(EK)

5-6. RAM-13 BOARD



RAM-13 – COMPONENT SIDE –

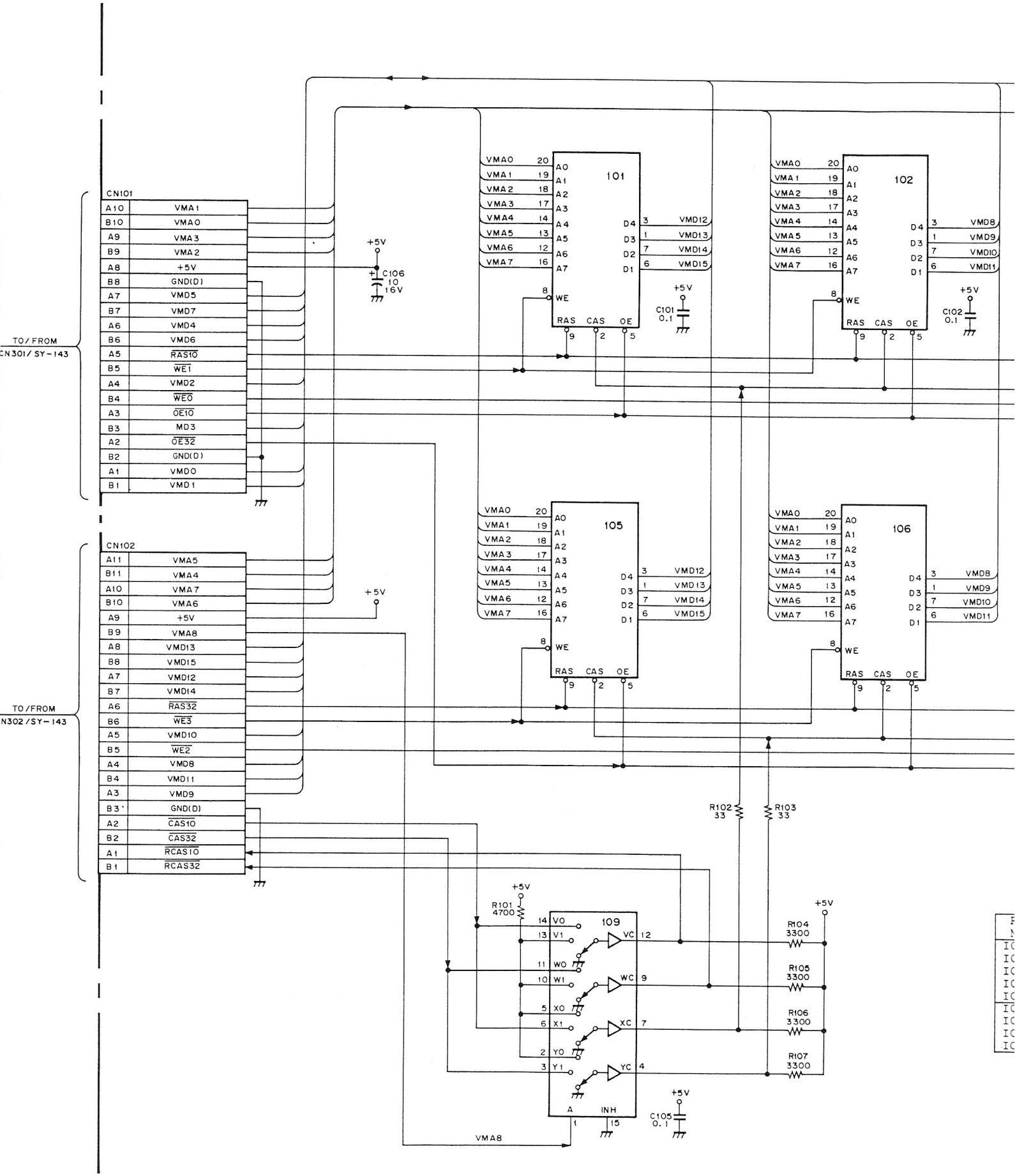
1-630-643-11
SMI-5051

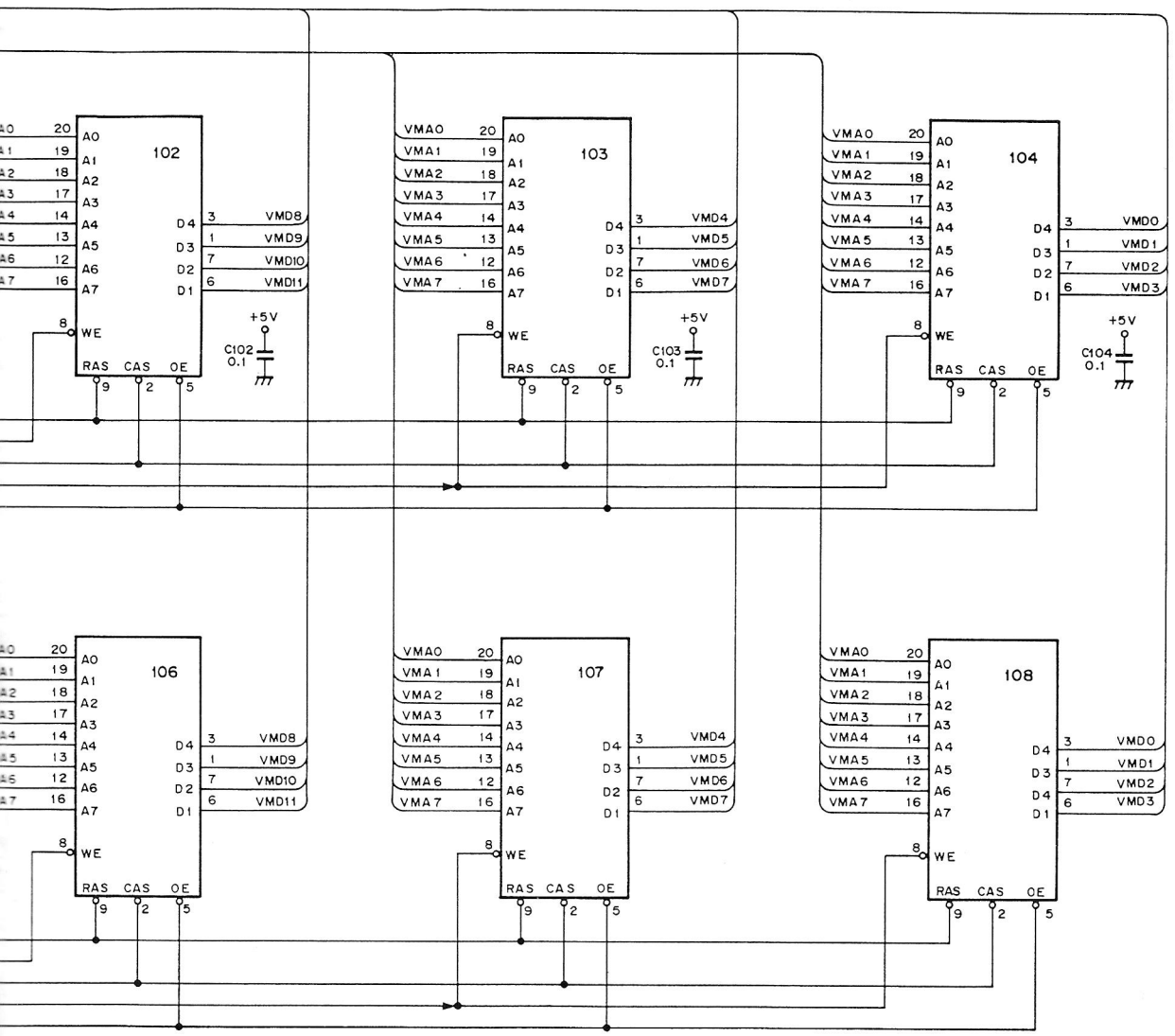


RAM-13 – COMPONENT SIDE –

1-630-643-11
SMI-5051

C101	A-1	IC101	A-1	R101	B-1
C102	A-1	IC102	A-1	R102	B-1
C103	B-1	IC103	B-1	R103	B-1
C104	B-1	IC104	B-1	R104	A-1
C105	A-1	IC105	A-1	R105	A-1
C106	B-1	IC106	A-1	R106	B-1
		IC107	B-1	R107	B-1
CN101	B-1	IC108	B-1		
CN102	A-1	IC109	A-1		

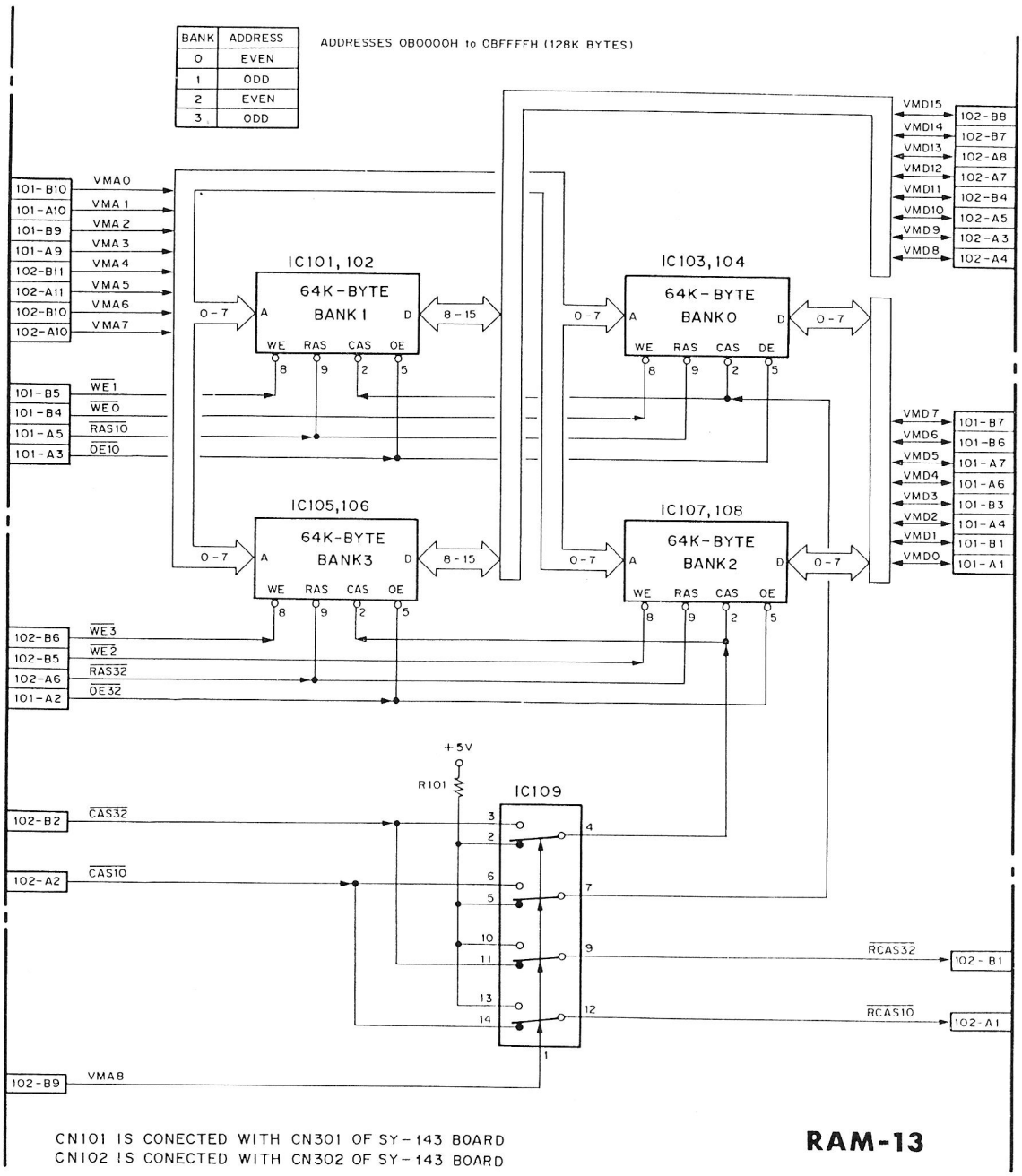

CN101
A10 VMA1
B10 VMA0
A9 VMA3
B9 VMA2
A8 +5V
B8 GND(D)
A7 VMD5
B7 VMD7
A6 VMD4
B6 VMD6
A5 RAS10
B5 WE1
A4 VMD2
B4 WE0
A3 OE10
B3 MD3
A2 OE32
B2 GND(D)
A1 VMD0
B1 VMD1
TO/FROM CN301/SY-143
CN102
A11 VMA5
B11 VMA4
A10 VMA7
B10 VMA6
A9 +5V
B9 VMA8
A8 VMD13
B8 VMD15
A7 VMD12
B7 VMD14
A6 RAS32
B6 WE3
A5 VMD10
B5 WE2
A4 VMD8
B4 VMD11
A3 VMD9
B3 GND(D)
A2 CAS10
B2 CAS32
A1 RCAS10
B1 RCAS32
TO/FROM CN302/SY-143
101
102
105
106
109
+5V
C106 10 16V
C101 0.1
C102 0.1
C105 0.1
R101 4700
R102 33
R103 33
R104 3300
R105 3300
R106 3300
R107 3300
VMA8



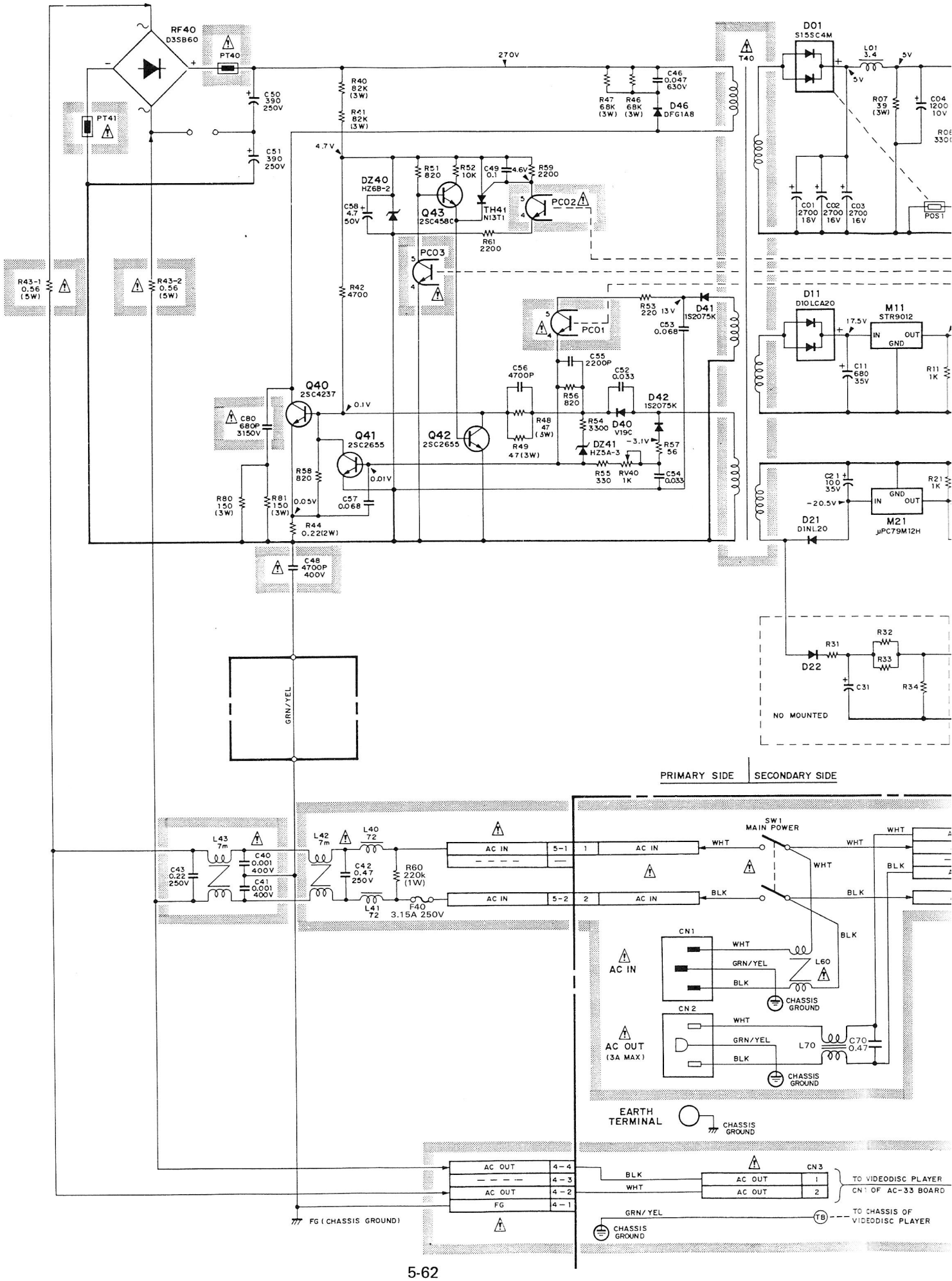
Ref. No.	TYPE	PIN No.	
		+5V	GND
IC101	MB81464-10PSZ	15	4
IC102	MB81464-10PSZ	15	4
IC103	MB81464-10PSZ	15	4
IC104	MB81464-10PSZ	15	4
IC105	MB81464-10PSZ	15	4
IC106	MB81464-10PSZ	15	4
IC107	MB81464-10PSZ	15	4
IC108	MB81464-10PSZ	15	4
IC109	MC74F157AN	16	8

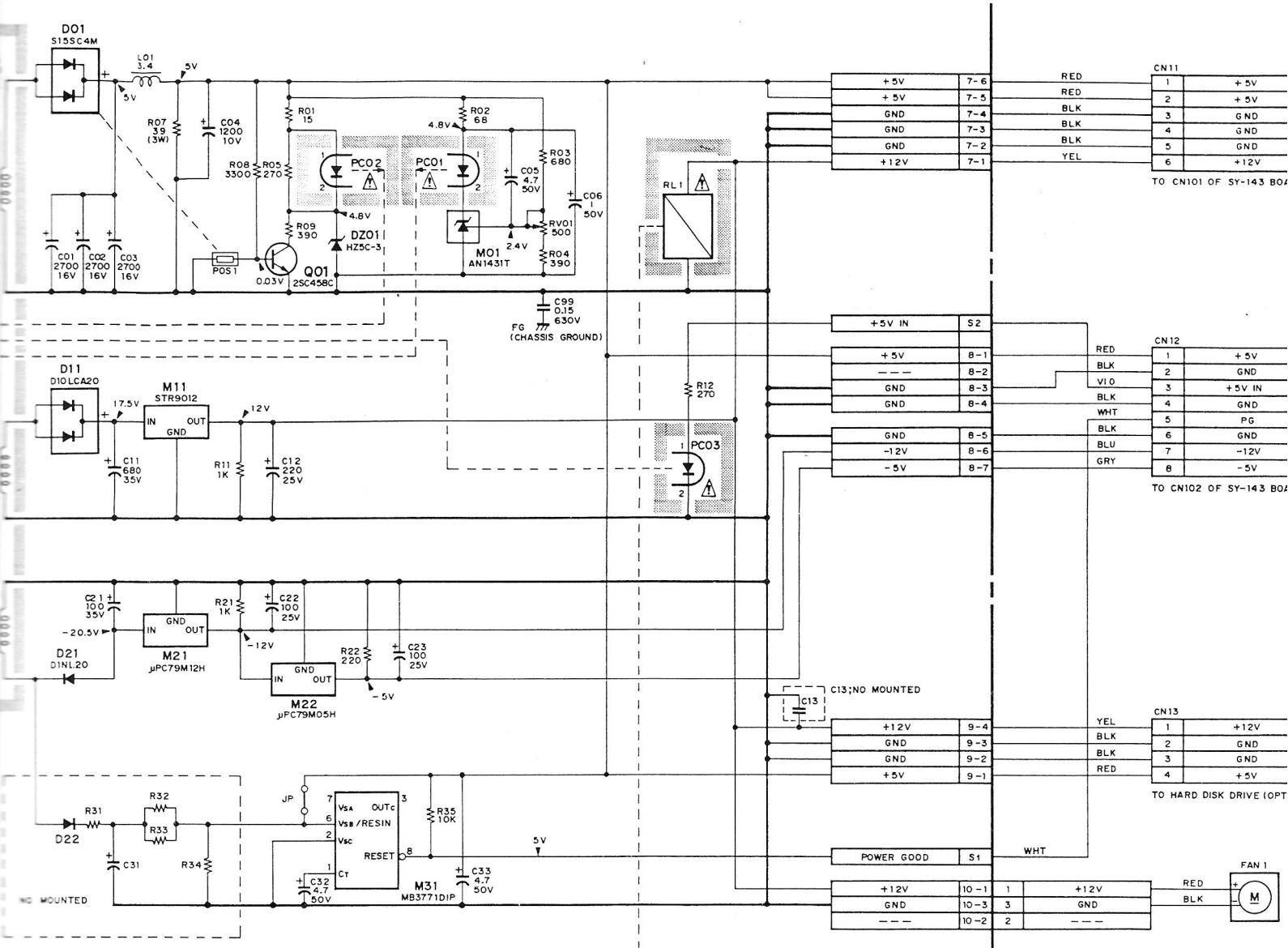
RAM-13
1-630-643-11

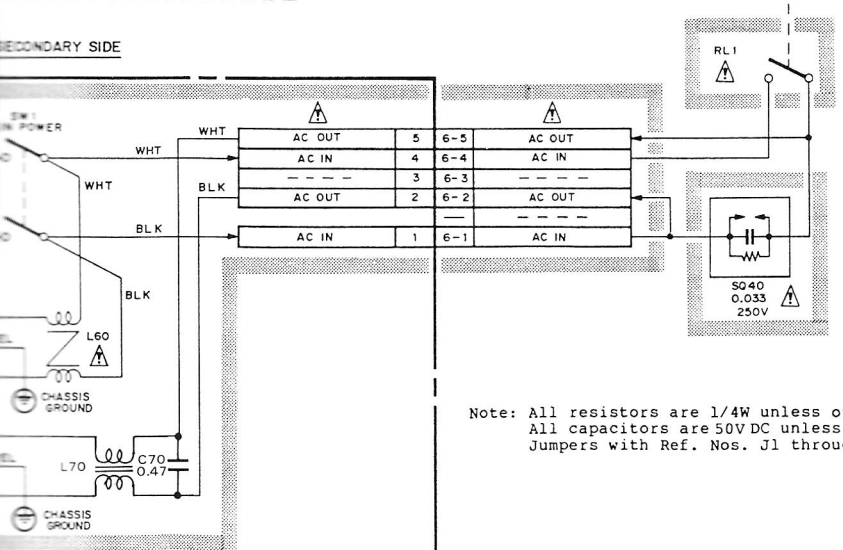
- **RAM-13 BLOCK DIAGRAM**

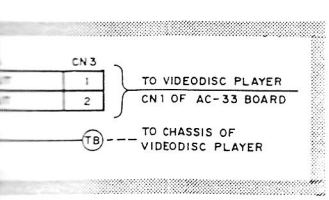


5-7. SWITCHING REGULATOR



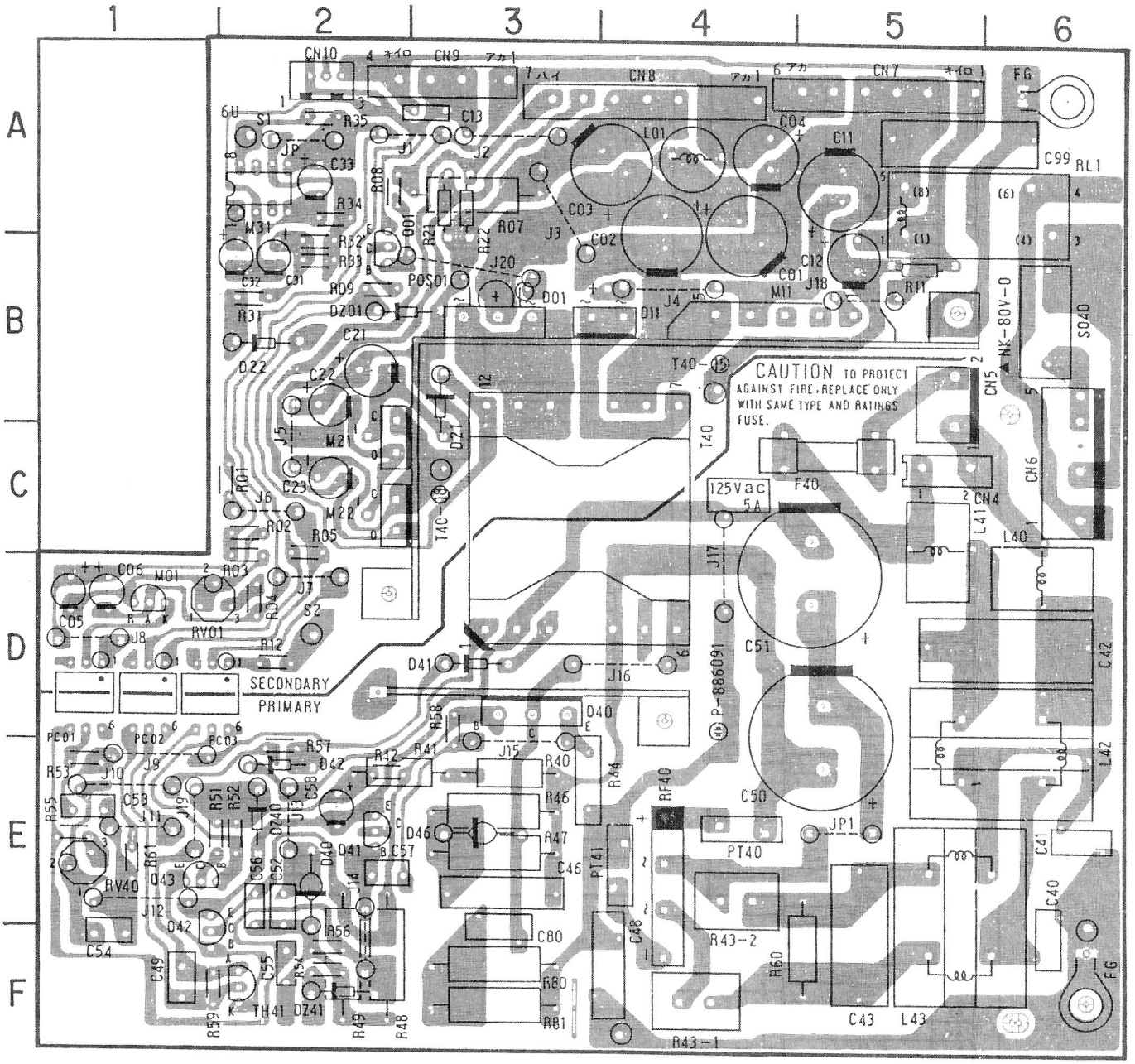






Note: All resistors are 1/4W unless otherwise noted.
All capacitors are 50V DC unless otherwise noted.
Jumpers with Ref. Nos. J1 through J20 are omitted.

SES-P/S EK
SWITCHING REG.
1-413-489-11
VIW-5600D(EK)



P-886091 — COMPONENT SIDE —

VIW-5600D(EK)

C01	B-4	C46	E-3	CN8	A-4	J5	C-2	JP1	E-5	PT40	E-4	R21	A-3	R53	E-1	S1	A-2
C02	A-4	C48	F-4	CN9	A-3	J6	C-2			PT41	E-4	R22	A-3	R54	F-2	S2	D-2
C03	A-3	C49	F-1	CN10	A-2	J7	D-2	L01	A-4			R31	B-2	R55	E-1		
C04	A-4	C50	E-4			J8	D-1	L40	C-6	Q01	A-2	R32	B-2	R56	F-2	SQ40	B-6
C05	D-1	C51	D-4	D01	B-3	J9	E-1	L41	C-5	Q40	D-3	R33	B-2	R57	E-2		
C06	D-1	C52	E-2	D11	B-4	J10	E-1	L42	E-6	Q41	E-2	R34	A-2	R58	D-3	T40	C-4
C11	A-5	C53	E-1	D21	C-3	J11	E-1	L43	F-5	Q42	F-1	R35	A-2	R59	F-1		
C12	B-5	C54	F-1	D22	B-2	J12	E-1			Q43	E-1	R40	E-3	R60	C-6	TH41	F-2
C13	A-3	C55	F-2	D40	E-2	J13	E-2	M01	D-1			R41	E-3	R61	E-1		
C21	B-2	C56	E-2	D41	D-3	J14	E-2	M11	B-4	R01	C-2	R42	E-2	R80	F-3		
C22	B-2	C57	E-2	D42	E-2	J15	E-3	M21	C-2	R02	C-2	R43-1	F-4	R81	F-3		
C23	C-2	C58	E-2	D46	E-3	J16	D-4	M22	C-2	R03	D-2	R43-2	F-4				
C31	B-2	C80	F-3			J17	D-4	M31	A-2	R04	D-2	R44	E-4	RF40	E-4		
C32	B-2	C99	A-6	F40	C-5	J18	B-5			R05	C-2	R46	E-3				
C33	A-2					J19	E-1	PC01	D-1	R07	A-3	R47	E-3	RL1	A-6		
C40	E-6	CN4	F-4	J1	A-2	J20	B-3	PC02	D-1	R08	A-2	R48	F-2				
C41	E-6	CN5	B-6	J2	A-3			PC03	D-1	R09	B-2	R49	F-2	RV01	D-1		
C42	D-6	CN6	C-6	J3	A-3	JP	A-2			R11	B-5	R51	E-1	RV40	E-1		
C43	F-5	CN7	A-5	J4	B-4			POS01	B-3	R12	D-2	R52	E-2				

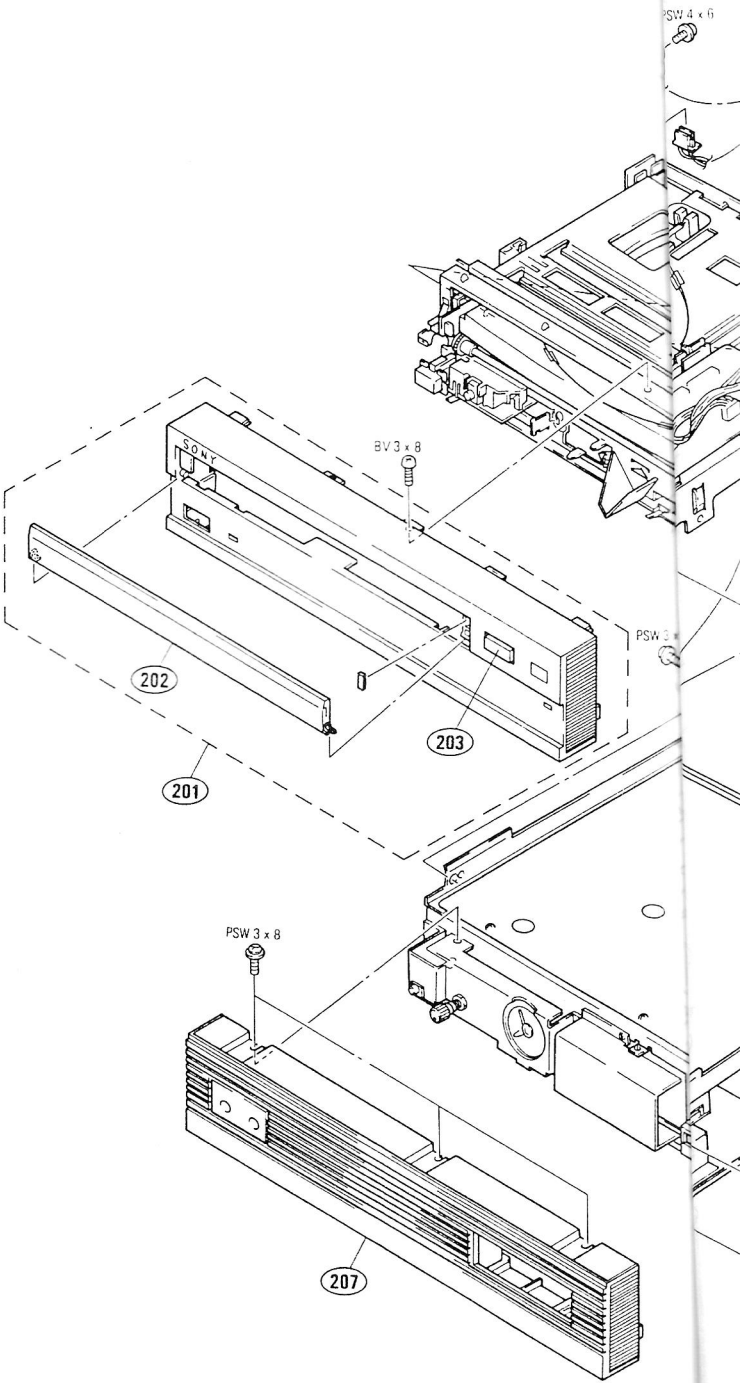
CHAPTER 9
REPAIR PARTS AND FIXTURES

- Refer to the service manual (9-975-189-XX) of MP-F17W for the micro floppydisk drive unit of VIW-5600D.
- Refer to the service manual (9-972-783-XX) of LDP-3600D for the videodisc player prat of VIW-5600D.

9-1. MECHAANICAL PARTS LIST

9-1-1. Cover Block

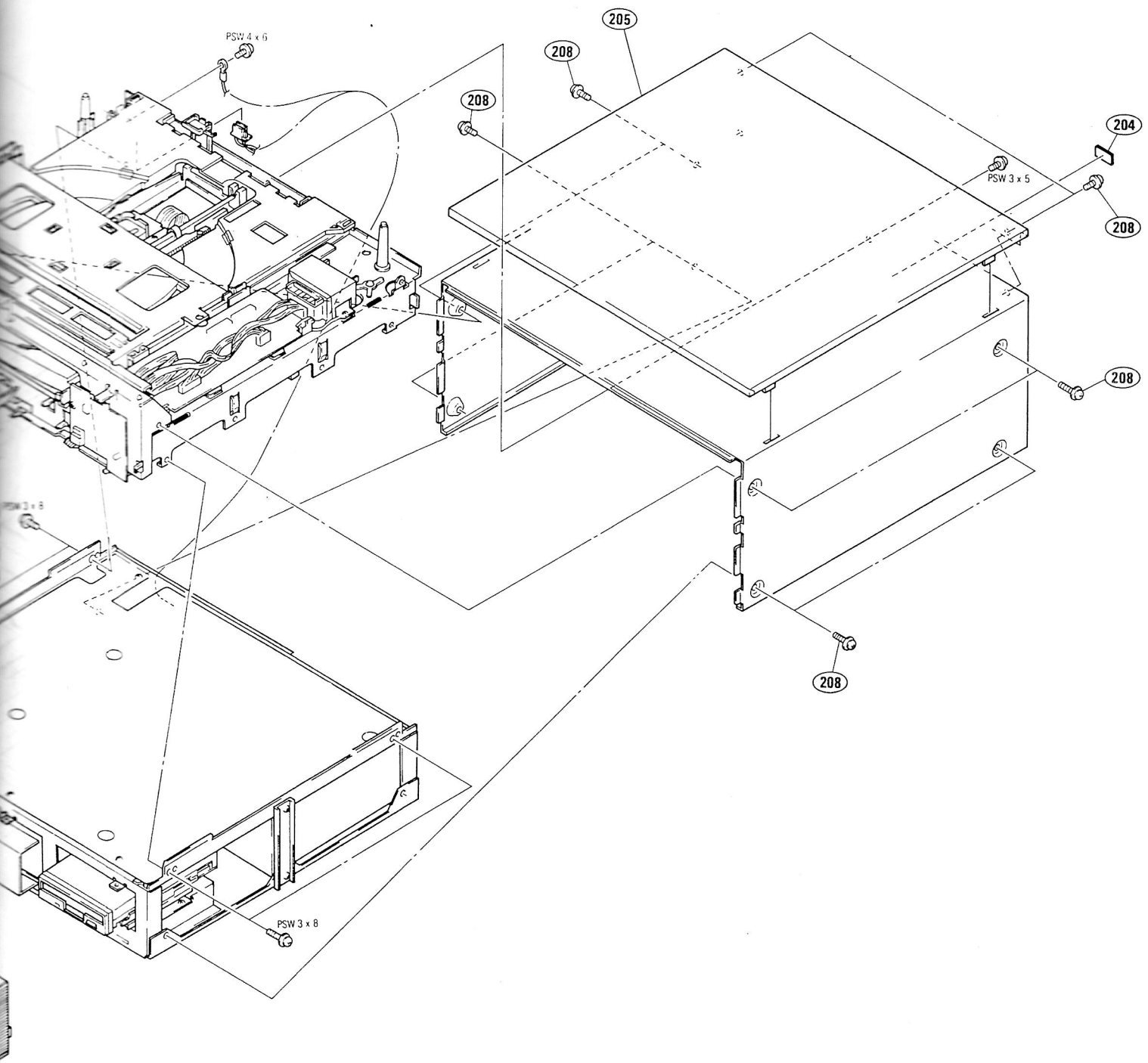
No.	Parts No.	Description
201	A-6408-154-C	PANEL ASSY, FRONT (including No. 202 and No. 203)
202	X-3688-256-2	DOOR ASSY, FRONT
203	3-715-924-32	BUTTON, EJECT
204	*4-615-804-01	SEAL, BAUD RATE
205	4-615-814-01	TABLE, MONITOR
206	4-615-817-01	CASE, UPPER
207	4-615-823-01	PANEL, FRONT
208	4-820-330-21	SCREW, CASE



NOTE:

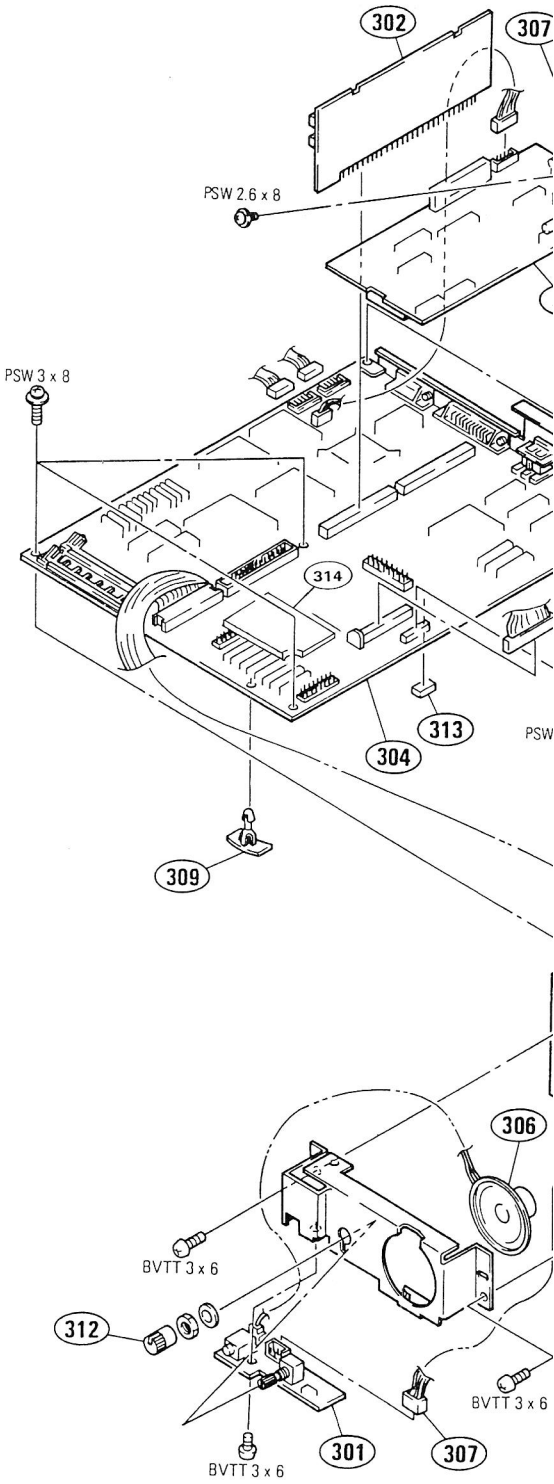
1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or description are not stocked because they are seldom required for routine service.

BLOCK COVER BLOCK



9-1-2. Computer Chassis Block

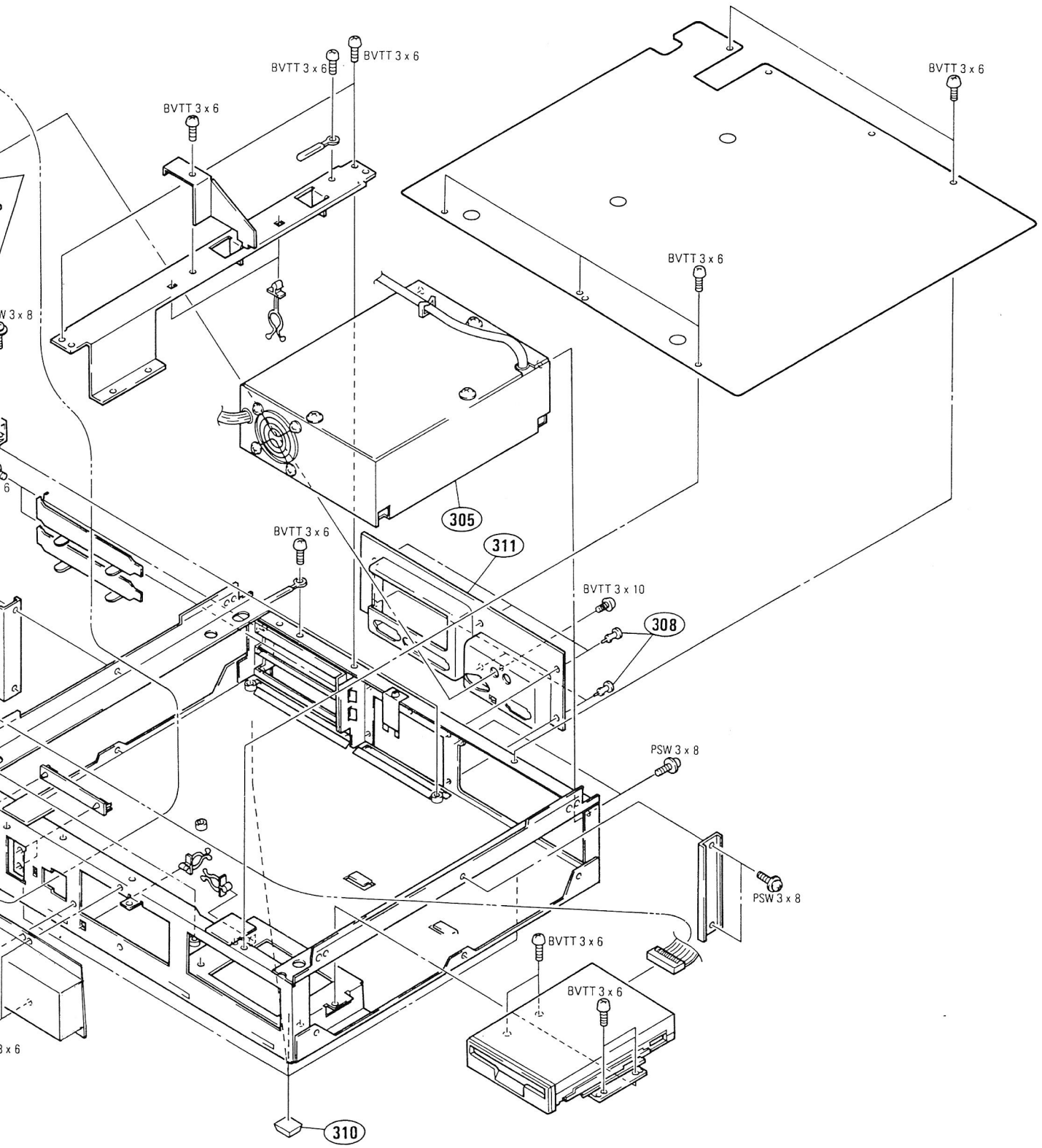
No.	Parts No.	Description
301	* 1-633-580-11	SP-21 BOARD
302	* A-8051-509-A	MOUNTED C B, MB-232
⚠303	* A-8051-632-A	MOUNTED C B, VS-42
304	* A-8051-633-A	MOUNTED C B, SY-143P (including No. 309, No. 313)
⚠305	* 1-413-489-11	REGULATOR, SWITCHING
306	1-544-265-11	SPEAKER
307	* 1-943-606-11	HARNESS (VS-SP)
308	3-531-576-11	RIVET, NYLON
309	* 3-704-198-21	SUPPORT, PC
310	4-611-214-01	FOOT, RUBBER
311	4-615-816-01	PANEL, REAR
312	4-902-067-41	KNOB, CONTROL
313	* 9-911-841-XX	CUSHION



NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or description are not stocked because they are seldom required for routine service.

COMPUTER CHASSIS BLOCK



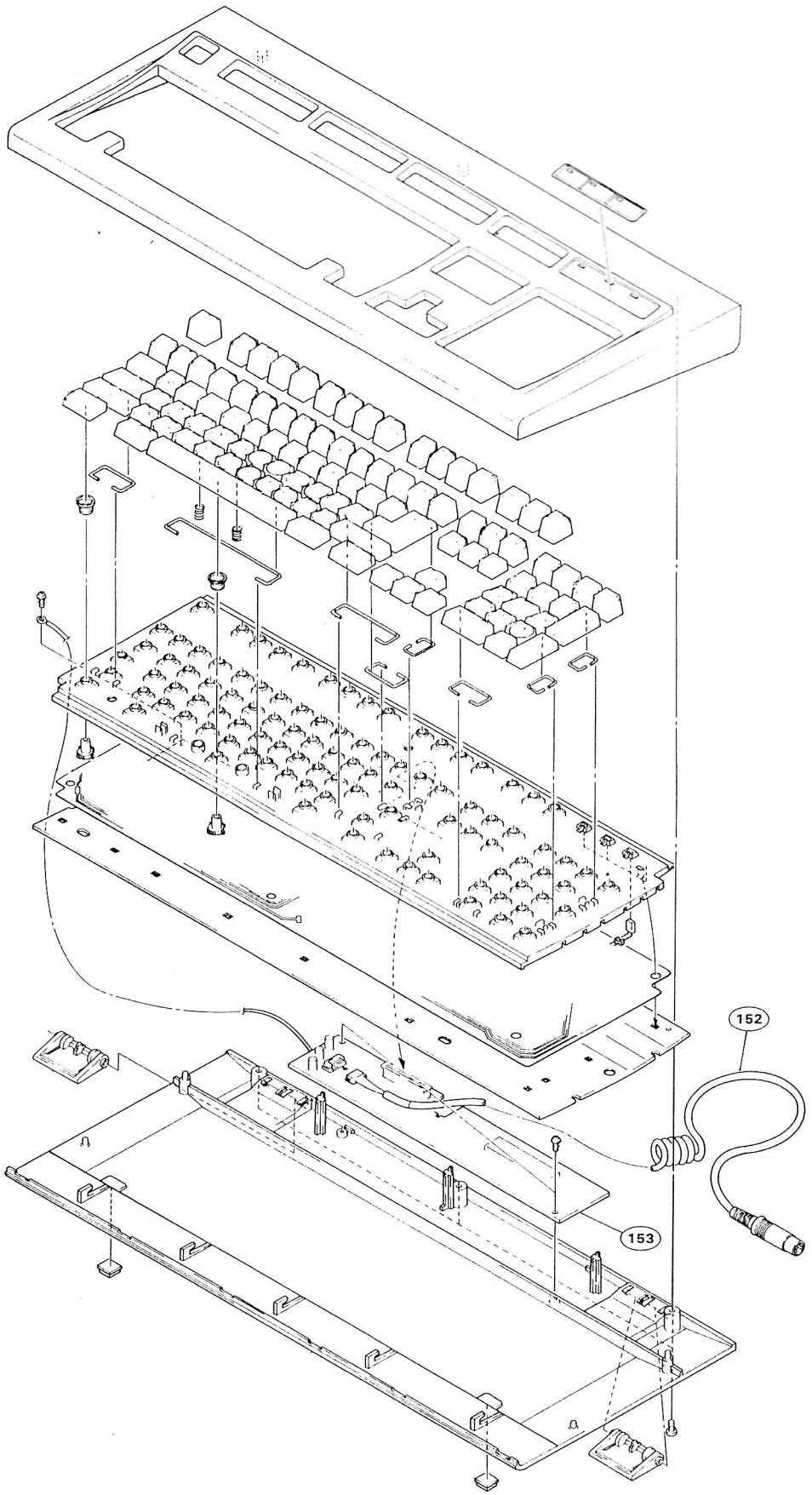
9-1-3. Keyboard block (Option)

Don't supply individual parts of the keyboard block for service except for follorings.

No.	Parts No.	Description
152	1-575-488-11	COAD, CURL
153	1-623-743-11	KB-30 BOARD

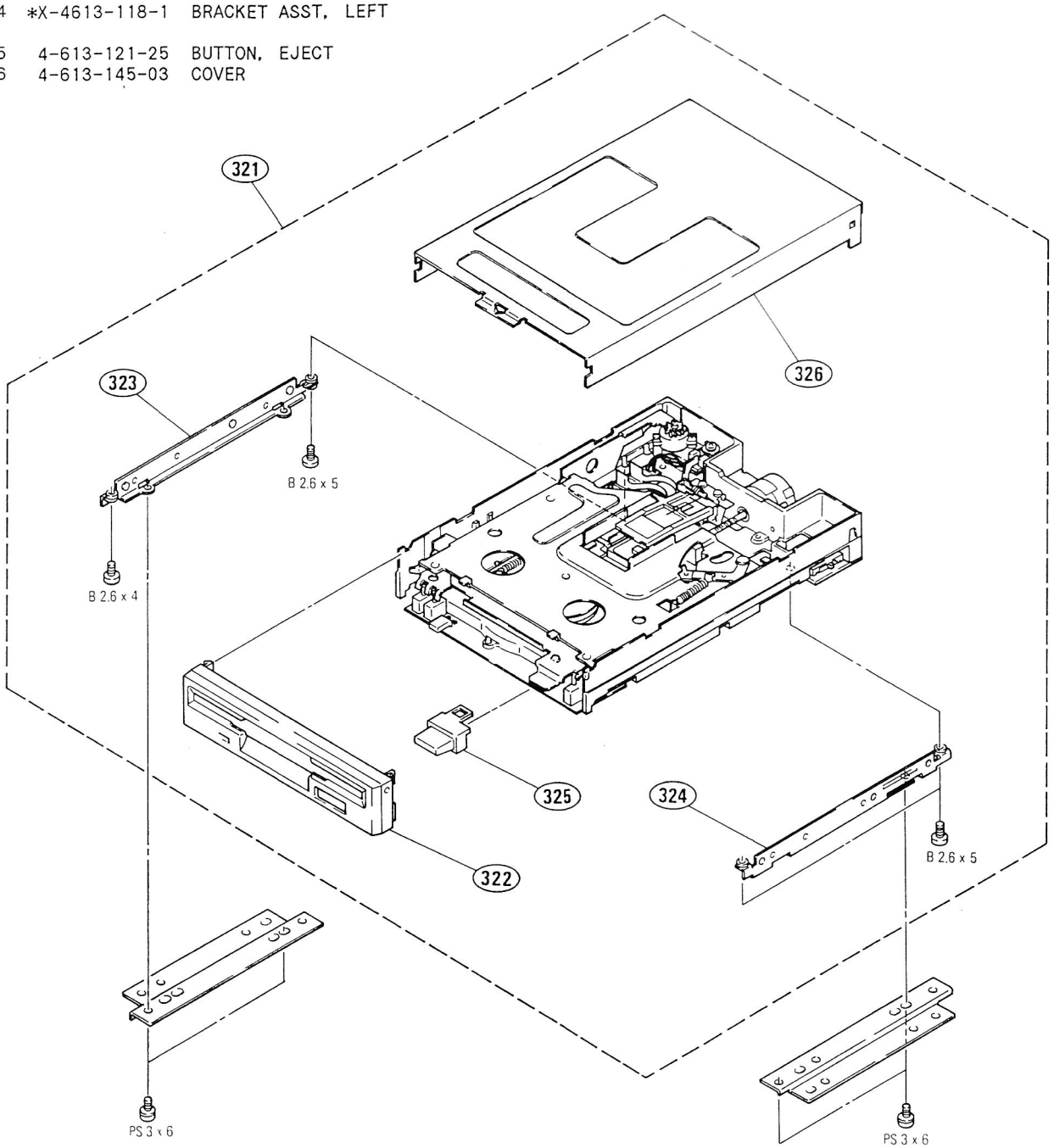
NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or description are not stocked because they are seldom required for routine service.


152
153

9-1-4. Micro Floppydisk Drive Block

No.	Parts No.	Description
321	A-8041-277-A	MFD-17W-53E (SVA)
322	A-8030-619-A	PANEL ASSY, FRONT
323	*X-4613-106-1	BRACKET ASST, RIGHT
324	*X-4613-118-1	BRACKET ASST, LEFT
325	4-613-121-25	BUTTON, EJECT
326	4-613-145-03	COVER

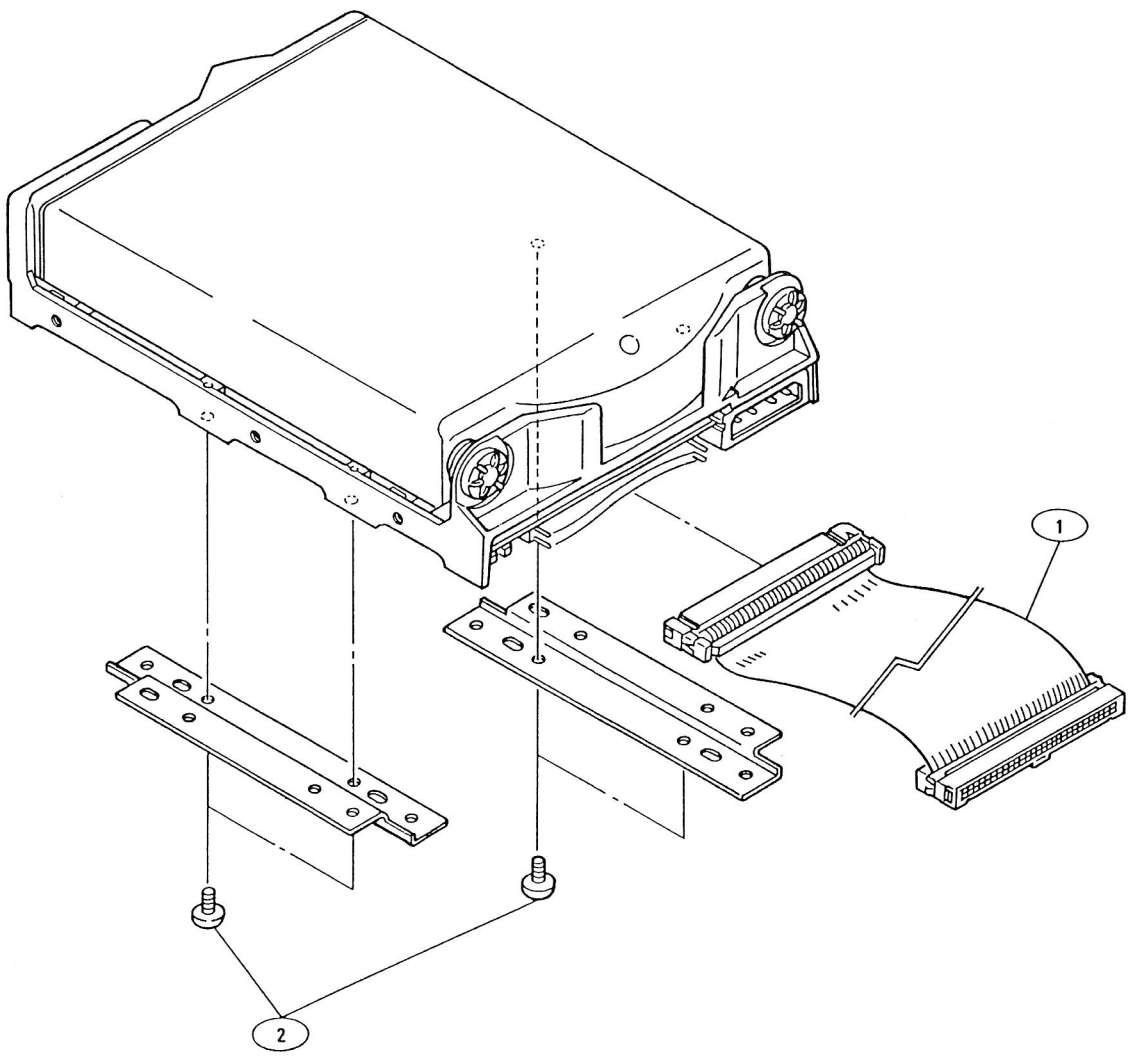


NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or description are not stocked because they are seldom required for routine service.

9-1-5. Hard Disc Drive Block

No.	Parts No.	Description
1	1-574-817-11	WIRE ASSY, FLAT SLIT (40 CORE)
2	4-606-940-01	SCREW (UNIFY), SMALL
	7-682-647-09	SCREW + PSW 3 × 6

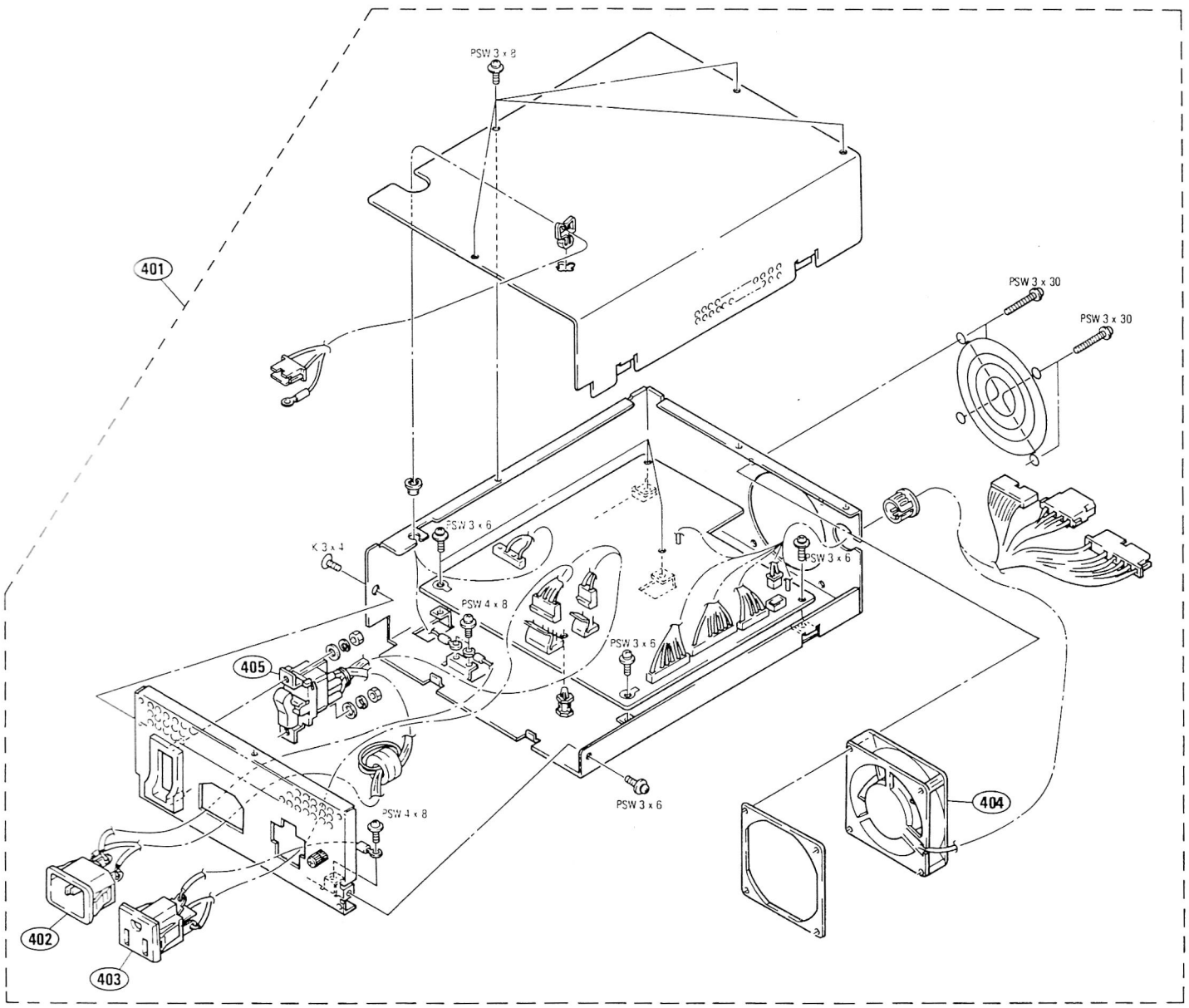


NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or description are not stocked because they are seldom required for routine service.

9-1-6. Switching Regulator Block

No.	Parts No.	Description
⚠ 401	*1-413-489-11	REGULATOR, SWITCHING (SES-P/S)
⚠ 402	1-540-121-11	INLET, AC (CN1)
⚠ 403	1-540-089-11	OUTLET, AC (CN2)
404	1-541-678-11	FAN (FAN1)
⚠ 405	1-571-947-11	POWER, SWITCH (SW1)



9-2. ELECTRICAL PARTS LIST

1-413-489-11 Switching Regulator

★★★★★★★★★★

Ref. No.	Parts No.	Description
	1-533-221-11	CLIP, FUSE
C01-03	1-126-624-11	ELECT 2700 20% 16V
C04	1-126-623-11	ELECT 1200 20% 10V
C05	1-126-626-11	ELECT 4.7 20% 50V
C06	1-126-625-11	ELECT 1 20% 50V
C11	1-126-622-11	ELECT 680 20% 35V
C12	1-126-628-11	ELECT 220 20% 25V
C21	1-126-621-11	ELECT 100 20% 35V
C22, 23	1-126-627-11	ELECT 100 20% 25V
C32, 33	1-126-626-11	ELECT 4.7 20% 50V
⚠C40, 41	1-164-290-11	CERAMIC 0.001 10% 400V
⚠C42	1-130-712-11	FILM 0.47 20% 250V
⚠C43	1-130-711-00	FILM 0.22 20% 250V
C46	1-136-909-11	FILM 0.047 10% 630V
⚠C48	1-164-291-11	CERAMIC 0.0047 20% 400V
C49	1-136-915-11	MYLAR 0.1 10% 50V
C50, 51	1-125-567-11	ELECT 390 20% 250V
C52	1-136-913-11	MYLAR 0.033 10% 50V
C53	1-136-914-11	MYLAR 0.068 10% 50V
C54	1-136-913-11	MYLAR 0.033 10% 50V
C55	1-136-911-11	MYLAR 0.0022 10% 50V
C56	1-136-912-11	MYLAR 0.0047 10% 50V
C57	1-136-914-11	MYLAR 0.068 10% 50V
C58	1-126-626-11	ELECT 4.7 20% 50V
⚠C70		0.47
⚠C80	1-164-292-11	CERAMIC 680pF 10% 3150V
C99	1-136-910-11	FILM 0.15 10% 630V
⚠CN1	1-540-121-11	INLET, AC
⚠CN2	1-540-089-11	OUTLET, AC

Ref. No.	Parts No.	Description
D01	8-719-510-24	S15SC4M
D11	8-719-510-25	D10LCA20
D21	8-719-510-26	D1NL20
D40	8-719-901-92	DFA1A2
D41, 42	8-719-949-29	1S2075K
D46	8-719-510-23	DFG1A8
DZ01	8-719-109-86	DIODE, RD5.1ES-B3
DZ40	8-719-109-90	DIODE, RD5.6ES-B2
DZ41	8-719-109-81	DIODE, RD4.7ES-B2
⚠F40	1-576-074-11	TIME-LAG 3.15A 250V
FAN1	1-541-678-11	FAN
L01	1-424-238-11	COIL, CHOKE 3.4
⚠L40, 41	1-424-239-11	COIL, CHOKE 72
⚠L42, 43	1-424-237-11	COIL, CHOKE 7m
⚠L60	1-543-637-11	CHOKE, DATA LINE
⚠L70	1-412-243-11	COIL, CHOKE
M01	8-759-420-19	IC, AN1431T
M11	8-749-990-12	IC, STR9012
M21	8-759-604-39	IC, M5F79M12
M22	8-759-604-41	IC, M5F79M05
M31	8-759-988-44	IC, MB3771DIP
⚠PC01-03	8-719-510-21	PHOTOCOUPLER, PC111S
POS1	1-808-738-11	THERMISTOR, POSITIVE

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.

2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref. No.	Parts No.	Description
⚠PT40, 41	1-808-737-11	THERMISTOR, POWER
Q01	8-729-922-82	2SC458C
Q40	8-729-922-81	2SC4237
Q41, 42	8-729-265-52	2SC2655Y
Q43	8-729-922-82	2SC458C
R01	1-247-690-11	CARBON 15 5% 1/4W
R02	1-247-698-11	CARBON 68 5% 1/4W
R03	1-247-711-11	CARBON 680 5% 1/4W
R04	1-247-707-11	CARBON 390 5% 1/4W
R05	1-247-705-11	CARBON 270 5% 1/4W
R07	1-216-472-00	METAL OXIDE 39 5% 3W
R08	1-247-719-11	CARBON 3.3K 5% 1/4W
R09	1-247-707-11	CARBON 390 5% 1/4W
R11	1-247-713-11	CARBON 1K 5% 1/4W
R12	1-247-705-11	CARBON 270 5% 1/4W
R21	1-247-713-11	CARBON 1K 5% 1/4W
R22	1-247-704-11	CARBON 220 5% 1/4W
R35	1-247-725-11	CARBON 10K 5% 1/4W
R40, 41	1-216-492-11	METAL OXIDE 82K 5% 3W
R42	1-247-721-11	CARBON 4.7K 5% 1/4W
⚠R43-1, 43-2	1-219-111-11	WIREWOUND 0.56 5W
R44	1-218-360-11	METAL PLATE 0.22 2W
R46, 47	1-215-928-11	METAL OXIDE 68K 5% 3W
R48, 49	1-215-909-11	METAL OXIDE 47 5% 3W
R51	1-247-712-11	CARBON 820 5% 1/4W
R52	1-247-725-11	CARBON 10K 5% 1/4W
R53	1-247-704-11	CARBON 220 5% 1/4W
R54	1-247-719-11	CARBON 3.3K 5% 1/4W
R55	1-247-706-11	CARBON 330 5% 1/4W
R56	1-247-712-11	CARBON 820 5% 1/4W
R57	1-247-697-11	CARBON 56 5% 1/4W
R58	1-247-712-11	CARBON 820 5% 1/4W
R59	1-247-717-11	CARBON 2.2K 5% 1/4W
⚠R60	1-259-886-11	CARBON 220K 5% 1W
R61	1-247-717-11	CARBON 2.2K 5% 1/4W
R80, 81	1-215-912-11	METAL OXIDE 150 5% 3W

Ref. No.	Parts No.	Description
RF40	8-719-510-22	DIODE, D3SB60
⚠RL1	1-515-748-11	RELAY, POWER
RV01	1-238-608-11	ADJ, CARBON 500
RV40	1-238-609-11	ADJ, CARBON 1K
⚠SQ40	1-136-908-11	SPARK KILLER 0.033μF 20% 250V
⚠SW1	1-571-947-11	SWITCH, POWER
⚠T40	1-449-684-11	TRANSFORMER, SWITCHING
TH41	8-729-101-31	TRANSISTOR, N13T1

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.

2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No.	Description			Remark
	*A-8051-509-A	MB-232 BOARD, COMPLETE			
		**********			
		CONNECTOR			
CN701	1-568-542-11	PIN, CONNECTOR 50P			
CN702	1-568-542-11	PIN, CONNECTOR 50P			
**********					
		RAM-13 BOARD			
		**********			
	3-531-576-01	RIVET			
		CAPACITOR			
C101	1-164-159-11	CERAMIC	0.1MF		50V
C102	1-164-159-11	CERAMIC	0.1MF		50V
C103	1-164-159-11	CERAMIC	0.1MF		50V
C104	1-164-159-11	CERAMIC	0.1MF		50V
C105	1-164-159-11	CERAMIC	0.1MF		50V
C106	1-126-157-11	ELECT	10MF	20%	16V
		CONNECTOR			
CN101	*1-568-499-11	HOUSING, CONNECTOR 20P			
CN102	*1-568-500-11	HOUSING, CONNECTOR 22P			
		IC			
IC101	8-759-944-61	IC MB81464-10PSZ			
IC102	8-759-944-61	IC MB81464-10PSZ			
IC103	8-759-944-61	IC MB81464-10PSZ			
IC104	8-759-944-61	IC MB81464-10PSZ			
IC105	8-759-944-61	IC MB81464-10PSZ			
IC106	8-759-944-61	IC MB81464-10PSZ			
IC107	8-759-944-61	IC MB81464-10PSZ			
IC108	8-759-944-61	IC MB81464-10PSZ			
IC109	8-759-938-93	IC 74F157APC			
		RESISTOR			
R101	1-249-425-11	CARBON	4.7K	5%	1/4W
R102	1-249-399-11	CARBON	33	5%	1/4W
R103	1-249-399-11	CARBON	33	5%	1/4W
R104	1-249-423-11	CARBON	3.3K	5%	1/4W
R105	1-249-423-11	CARBON	3.3K	5%	1/4W
R106	1-249-423-11	CARBON	3.3K	5%	1/4W
R107	1-249-423-11	CARBON	3.3K	5%	1/4W
**********					
A001	*1-633-580-11	SP-21 BOARD			
		**********			
		CAPACITOR			
C602	1-124-360-00	ELECT	1000MF	20%	16V
C603	1-102-074-00	CERAMIC	0.001MF	10%	50V
C604	1-124-477-11	ELECT	47MF	20%	25V
C605	1-124-120-11	ELECT	220MF	20%	25V
C606	1-124-477-11	ELECT	47MF	20%	25V
C607	1-124-360-00	ELECT	1000MF	20%	16V
C608	1-136-165-00	MYLAR	0.1MF	10%	50V
		CONNECTOR			
CN601	1-506-469-11	PIN, CONNECTOR 4P			
		FERRITE BEAD			
FB601	1-410-396-41	FERRITE BEAD INDUCTOR			
		IC			
IC601	8-759-101-77	IC UPC1241H			
		JACK			
J601	1-507-995-11	JACK, MICROPHONE			
		COIL			
L601	1-410-665-31	INDUCTOR	15UH		
		RESISTOR			
R601	1-249-429-11	CARBON	10K	5%	1/4W
R602	1-249-385-11	CARBON	2.2	5%	1/4W
R603	1-249-412-11	CARBON	390	5%	1/4W
R604	1-249-410-11	CARBON	270	5%	1/4W
		VARIABLE RESISTOR			
RV601	1-230-858-11	RES, VAR, CARBON 10K			
**********					
	*A-8051-632-A	VS-42 BOARD, COMPLETE			
		**********			
		CAPACITOR			
C401	1-124-589-11	ELECT	47MF	20%	16V
C402	1-124-234-00	ELECT	22MF	20%	16V
C403	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C404	1-126-157-11	ELECT	10MF	20%	16V
C405	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V
C406	1-126-157-11	ELECT	10MF	20%	16V
C407	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C409	1-124-234-00	ELECT	22MF	20%	16V
C410	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C411	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C415	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C417	1-124-234-00	ELECT	22MF	20%	16V
C418	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C419	1-124-234-00	ELECT	22MF	20%	16V
C421	1-126-157-11	ELECT	10MF	20%	16V
C422	1-163-038-00	CERAMIC CHIP	0.1MF		25V

Ref.No	Part No.	Description			Remark
C423	1-126-096-11	ELECT	10MF	20%	35V
C424	1-126-096-11	ELECT	10MF	20%	35V
C425	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C426	1-124-234-00	ELECT	22MF	20%	16V
C428	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C429	1-124-234-00	ELECT	22MF	20%	16V
C430	1-124-438-00	ELECT	1MF	20%	50V
C431	1-124-438-00	ELECT	1MF	20%	50V
C432	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C434	1-130-728-00	FILM	0.0022MF	5%	50V
C435	1-108-798-11	MYLAR	0.0033MF	5%	50V
C437	1-124-589-11	ELECT	47MF	20%	16V
C438	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C439	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C440	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C441	1-136-161-00	FILM	0.047MF	5%	50V
C442	1-136-157-00	FILM	0.022MF	5%	50V
C443	1-130-471-00	MYLAR	0.001MF	5%	50V
C444	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C445	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C446	1-124-589-11	ELECT	47MF	20%	16V
C447	1-126-157-11	ELECT	10MF	20%	16V
C448	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C449	1-126-096-11	ELECT	10MF	20%	35V
C450	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C451	1-126-157-11	ELECT	10MF	20%	16V
C452	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C453	1-124-589-11	ELECT	47MF	20%	16V
C454	1-136-161-00	FILM	0.047MF	5%	50V
C455	1-124-465-00	ELECT	0.47MF	20%	50V
C456	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C457	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C458	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C459	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C460	1-124-234-00	ELECT	22MF	20%	16V
C461	1-136-161-00	FILM	0.047MF	5%	50V
C462	1-124-234-00	ELECT	22MF	20%	16V
C463	1-124-438-00	ELECT	1MF	20%	50V
C464	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C465	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C466	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C467	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C468	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C469	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C470	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C471	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C472	1-124-589-11	ELECT	47MF	20%	16V
C473	1-124-589-11	ELECT	47MF	20%	16V
C474	1-124-589-11	ELECT	47MF	20%	16V
C475	1-126-157-11	ELECT	10MF	20%	16V
C476	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C477	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C478	1-163-038-00	CERAMIC CHIP	0.1MF		25V

Ref.No	Part No.	Description			Remark
C479	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C480	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C481	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C482	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C483	1-126-157-11	ELECT	10MF	20%	16V
C484	1-124-252-00	ELECT	0.33MF	20%	50V
C485	1-124-252-00	ELECT	0.33MF	20%	50V
C486	1-124-252-00	ELECT	0.33MF	20%	50V
C487	1-126-157-11	ELECT	10MF	20%	16V
C488	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C489	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C490	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C491	1-126-157-11	ELECT	10MF	20%	16V
C492	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C493	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C494	1-124-589-11	ELECT	47MF	20%	16V
C495	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C496	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C497	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C498	1-126-157-11	ELECT	10MF	20%	16V
C499	1-126-157-11	ELECT	10MF	20%	16V
C500	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C501	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C502	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C503	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C505	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C506	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C507	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C508	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C509	1-126-096-11	ELECT	10MF	20%	35V
C510	1-124-482-11	ELECT	33MF	20%	35V
C511	1-124-479-11	ELECT	330MF	20%	25V
C512	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C513	1-126-157-11	ELECT	10MF	20%	16V
C514	1-126-157-11	ELECT	10MF	20%	16V
C515	1-126-157-11	ELECT	10MF	20%	16V
C516	1-124-234-00	ELECT	22MF	20%	16V
C517	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C518	1-126-157-11	ELECT	10MF	20%	16V
C519	1-126-157-11	ELECT	10MF	20%	16V
C520	1-126-157-11	ELECT	10MF	20%	16V
C522	1-124-234-00	ELECT	22MF	20%	16V
C523	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C524	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C525	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C526	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C527	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C528	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C529	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V
C531	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C532	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C533	1-163-038-00	CERAMIC CHIP	0.1MF		25V

Ref.No	Part No.	Description	Remark
C534	1-126-157-11	ELECT 10MF 20% 16V	
		CONNECTOR	
CN401	1-506-471-11	PIN, CONNECTOR 6P	
CN402	1-568-698-11	CONNECTOR, SQUARE TYPE (S) 40P	
CN403	1-506-469-11	PIN, CONNECTOR 4P	
CN404	1-568-540-11	JACK, PIN 2P	
		TRIMMER	
CV401	1-141-260-00	TRIMMER, CERAMIC	
CV402	1-141-260-00	TRIMMER, CERAMIC	
		DIODE	
D401	8-719-800-76	DIODE 1SS123-T1	
D402	8-719-108-24	DIODE 1SS222-T1	
D403	8-719-400-18	DIODE 1S2837-T1	
D404	8-719-400-18	DIODE 1S2837-T1	
D405	8-719-920-70	DIODE 1SS135E	
D406	8-719-108-24	DIODE 1SS222-T1	
		DELAY LINE	
DL402	1-415-122-31	DELAY LINE, 1H (PAL)	
		FERRITE BEAD	
FB401	1-543-570-11	BEAD, FERRITE (CHIP)	
FB402	1-543-570-11	BEAD, FERRITE (CHIP)	
FB403	1-543-570-11	BEAD, FERRITE (CHIP)	
FB404	1-543-570-11	BEAD, FERRITE (CHIP)	
		FILTER	
FL401	1-236-628-11	FILTER, LC (NTSC)	
FL402	1-236-627-11	FILTER, LC (PAL)	
		IC	
IC401	8-752-006-12	IC CX20061	
IC402	8-752-006-12	IC CX20061	
IC403	8-759-278-09	IC TA78L009AP	
IC404	8-759-906-01	IC TL601CP	
IC405	8-759-800-11	IC LA7801	
IC406	8-759-916-20	IC SN74HC14N	
IC407	8-759-206-28	IC TC74HC123F	
IC408	8-759-982-05	IC RC7805FA	
IC409	8-759-982-47	IC RC79L09A	
IC410	8-752-030-75	IC V7020	
IC411	8-759-906-01	IC TL601CP	
IC412	8-759-132-40	IC UPC324C	
IC413	8-759-007-21	IC MC74HC4053N	
IC414	8-752-329-47	IC CXD1172M	
IC415	8-752-329-47	IC CXD1172M	
IC416	8-752-329-47	IC CXD1172M	
IC418	8-759-990-84	IC TL084CN	
IC419	8-759-147-64	IC UPD65013GB-A31-3B4	
IC420	8-759-206-28	IC TC74HC123F	
		COIL	
L401	1-408-785-21	INDUCTOR CHIP 47UH	
L403	1-408-785-21	INDUCTOR CHIP 47UH	
L404	1-408-797-11	INDUCTOR CHIP 470UH	
L405	1-408-785-21	INDUCTOR CHIP 47UH	
L406	1-408-785-21	INDUCTOR CHIP 47UH	
L407	1-408-774-11	INDUCTOR CHIP 5.6UH	
L408	1-408-785-21	INDUCTOR CHIP 47UH	
L409	1-408-785-21	INDUCTOR CHIP 47UH	
L410	1-408-785-21	INDUCTOR CHIP 47UH	
L411	1-408-785-21	INDUCTOR CHIP 47UH	
L412	1-408-785-21	INDUCTOR CHIP 47UH	
L413	1-408-785-21	INDUCTOR CHIP 47UH	
		TRANSFORMER	
LV401	1-425-928-00	TRANSFORMER, DELAY ADJUSTING	
		TRANSISTOR	
Q401	8-729-100-66	TRANSISTOR 2SC1623	
Q402	8-729-216-22	TRANSISTOR 2SA1162	
Q403	8-729-216-22	TRANSISTOR 2SA1162	
Q404	8-729-100-66	TRANSISTOR 2SC1623	
Q406	8-729-100-66	TRANSISTOR 2SC1623	
Q407	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q408	8-729-113-75	TRANSISTOR FN1A4P-M34	
Q409	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q410	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q411	8-729-114-01	TRANSISTOR FN1A4Z-M68	
Q412	8-729-100-66	TRANSISTOR 2SC1623	
Q413	8-729-100-66	TRANSISTOR 2SC1623	
Q414	8-729-100-66	TRANSISTOR 2SC1623	
Q415	8-729-658-32	TRANSISTOR 2SC1583	
Q416	8-729-658-32	TRANSISTOR 2SC1583	
Q417	8-729-100-66	TRANSISTOR 2SC1623	
Q418	8-729-100-66	TRANSISTOR 2SC1623	
Q419	8-729-658-32	TRANSISTOR 2SC1583	
Q420	8-729-100-66	TRANSISTOR 2SC1623	
Q421	8-729-100-66	TRANSISTOR 2SC1623	
Q423	8-729-100-66	TRANSISTOR 2SC1623	
Q424	8-729-100-66	TRANSISTOR 2SC1623	
Q425	8-729-100-66	TRANSISTOR 2SC1623	
Q426	8-729-100-66	TRANSISTOR 2SC1623	
Q427	8-729-100-66	TRANSISTOR 2SC1623	
Q428	8-729-400-76	TRANSISTOR 2SD1030	
Q429	8-729-400-76	TRANSISTOR 2SD1030	
Q430	8-729-400-76	TRANSISTOR 2SD1030	
Q433	8-729-901-87	TRANSISTOR 2SC2411K-CQ	
Q434	8-729-100-66	TRANSISTOR 2SC1623	
Q435	8-729-100-66	TRANSISTOR 2SC1623	
Q436	8-729-100-66	TRANSISTOR 2SC1623	

Ref.No	Part No.	Description				Remark
Q437	8-729-100-66	TRANSISTOR 2SC1623				
Q438	8-729-100-66	TRANSISTOR 2SC1623				
Q440	8-729-100-66	TRANSISTOR 2SC1623				
		RESISTOR				
R401	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R402	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R403	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R404	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R405	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R406	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R407	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R408	1-216-042-00	METAL GLAZE	510	5%	1/10W	
R410	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R412	1-216-040-00	METAL GLAZE	430	5%	1/10W	
R414	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R415	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R416	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R417	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R420	1-216-042-00	METAL GLAZE	510	5%	1/10W	
R421	1-216-040-00	METAL GLAZE	430	5%	1/10W	
R422	1-216-026-00	METAL GLAZE	110	5%	1/10W	
R423	1-216-026-00	METAL GLAZE	110	5%	1/10W	
R424	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R428	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R429	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R430	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R432	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R433	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R434	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R435	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R436	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W	
R437	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R439	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R440	1-216-111-00	METAL GLAZE	390K	5%	1/10W	
R441	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R442	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R443	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W	
R444	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R445	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R446	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R447	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R448	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R449	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R450	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R451	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R452	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R453	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R454	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R455	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R457	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R458	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R459	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R460	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R461	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R462	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R463	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R464	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R465	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R466	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R468	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R469	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W	
R470	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W	
R471	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R472	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R473	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W	
R474	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R475	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R476	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R477	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R478	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R479	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R480	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R481	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R482	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R483	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R484	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R485	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R486	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R487	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R488	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R489	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R490	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R491	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R492	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R493	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R494	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R495	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R496	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R497	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R498	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R499	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R500	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R501	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R502	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R503	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R504	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R505	1-216-542-11	METAL GLAZE	12K	1%	1/10W	
R506	1-218-153-91	METAL GLAZE	1.6K	1%	1/10W	
R507	1-216-329-11	METAL GLAZE	5.1K	1%	1/10W	
R510	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R511	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R512	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R513	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R514	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R515	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R516	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R517	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R518	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R519	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R520	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R521	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R522	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R523	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R524	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R525	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R526	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R527	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R528	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R529	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R530	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R531	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R532	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R533	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R534	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R535	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R536	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R537	1-216-064-00	METAL GLAZE	4.3K	5%	1/10W	

VARIABLE RESISTOR

RV401	1-230-520-11	RES, ADJ, METAL GLAZE	1K
RV402	1-230-520-11	RES, ADJ, METAL GLAZE	1K
RV403	1-230-522-11	RES, ADJ, METAL GLAZE	4.7K
RV404	1-230-522-11	RES, ADJ, METAL GLAZE	4.7K
RV405	1-230-522-11	RES, ADJ, METAL GLAZE	4.7K
RV406	1-230-521-11	RES, ADJ, METAL GLAZE	2.2K
RV407	1-230-521-11	RES, ADJ, METAL GLAZE	2.2K
RV408	1-230-523-11	RES, ADJ, METAL GLAZE	10K
RV409	1-230-519-11	RES, ADJ, METAL GLAZE	470
RV410	1-230-523-11	RES, ADJ, METAL GLAZE	10K
RV411	1-230-523-11	RES, ADJ, METAL GLAZE	10K

CRYSTAL

X401	1-577-292-11	VIBRATOR, CRYSTAL
X402	1-577-662-11	VIBRATOR, CRYSTAL
X403	1-577-663-11	VIBRATOR, CRYSTAL
X404	1-567-878-11	VIBRATOR, CRYSTAL

****

Ref.No	Part No.	Description			Remark
	*A-8051-633-A	SY-143P BOARD, COMPLETE			
		**********			
	1-562-151-11	HOUSING, CONNECTOR 6P			
	1-562-739-11	HOUSING, CONNECTOR 6P			
	1-564-026-00	CONTACT, RECEPTACLE			
	1-564-831-11	CONTACT, CONNECTOR			
	9-911-841-XX	CUSHION			
	*3-704-198-21	SUPPORT, PC			
	7-682-648-09	SCREW +PS 3X8			
	8-759-982-95	IC P8742AH			

CAPACITOR

C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C103	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C104	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C105	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C106	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C107	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C108	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C110	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C111	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C114	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C115	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C116	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C117	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C119	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C120	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C121	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C122	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C123	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C124	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C125	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C126	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C127	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C128	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C129	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C130	1-124-589-11	ELECT	47MF	20%	16V
C131	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C132	1-124-589-11	ELECT	47MF	20%	16V
C133	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C137	1-126-157-11	ELECT	10MF	20%	16V
C138	1-126-096-11	ELECT	10MF	20%	25V
C139	1-124-229-00	ELECT	33MF	20%	10V
C140	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C141	1-124-229-00	ELECT	33MF	20%	10V
C142	1-126-096-11	ELECT	10MF	20%	25V
C143	1-163-357-91	CERAMIC CHIP	15PF	5%	50V

Ref.No	Part No.	Description		Remark
C144	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C145	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C146	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C147	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C148	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C149	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C150	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C151	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C152	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C153	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C154	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C155	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C156	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C157	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C158	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C159	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C160	1-164-161-11	CERAMIC CHIP 0.0022MF		50V
C161	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C162	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C167	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C168	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C169	1-124-589-11	ELECT 47MF	20%	16V
C171	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C172	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C173	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C174	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C175	1-124-229-00	ELECT 33MF	20%	10V
C177	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C178	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C179	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C180	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C181	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C186	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C201	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C202	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C203	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C204	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C205	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C206	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C208	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C217	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C218	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C219	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C227	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C228	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C301	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C302	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C303	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C304	1-126-157-11	ELECT 10MF	20%	16V
C305	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C306	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C307	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C308	1-163-038-00	CERAMIC CHIP 0.1MF		25V

Ref.No	Part No.	Description		Remark
C309	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C310	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C311	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C312	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C313	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C314	1-126-157-11	ELECT 10MF	20%	16V
C315	1-124-438-00	ELECT 1MF	20%	50V
C316	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C317	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C318	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C319	1-126-157-11	ELECT 10MF	20%	16V
C320	1-124-438-00	ELECT 1MF	20%	50V
C321	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C322	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C323	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C324	1-126-157-11	ELECT 10MF	20%	16V
C325	1-124-438-00	ELECT 1MF	20%	50V
C326	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C327	1-126-157-11	ELECT 10MF	20%	16V
C328	1-124-229-00	ELECT 33MF	20%	10V
C329	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C330	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C332	1-136-173-00	FILM 0.47MF	5%	50V
C333	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C334	1-126-157-11	ELECT 10MF	20%	16V
C335	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C336	1-136-173-00	FILM 0.47MF	5%	50V
C337	1-126-157-11	ELECT 10MF	20%	16V
C338	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C339	1-106-353-00	MYLAR 0.0027MF	5%	50V
C340	1-163-381-91	CERAMIC CHIP 150PF	5%	50V
C341	1-163-006-11	CERAMIC CHIP 560PF	10%	50V
C342	1-163-006-11	CERAMIC CHIP 560PF	10%	50V
C343	1-126-157-11	ELECT 10MF	20%	16V
C344	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C346	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C347	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C348	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C349	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C350	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C351	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C352	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C353	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C354	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C355	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C356	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C357	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C358	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C359	1-124-589-11	ELECT 47MF	20%	16V
C360	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C361	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C364	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C368	1-163-038-00	CERAMIC CHIP 0.1MF		25V

Ref.No	Part No.	Description			Remark
C370	1-163-123-00	CERAMIC CHIP 180PF	5%	50V	
C371	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C372	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C373	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
		CONNECTOR			
CN101	*1-564-423-11	HEADER, SPRING (POWER) 6P			
CN102	*1-506-737-11	HEADDER, SPRING 8P			
CN103	1-574-746-11	WIRE ASSY, FLAT SLIT (34 CORE)			
CN104	1-563-161-11	CONNECTOR, D-SUB(MOUNT TYPE)25P			
CN105	1-568-492-11	CONNECTOR, D-SUB (MOUNT) 9P			
CN106	1-563-496-12	CONNECTOR, DIN 5P			
CN108	*1-568-592-11	SOCKET, CONNECTOR (DIP TYPE)			
CN109	*1-568-592-11	SOCKET, CONNECTOR (DIP TYPE)			
CN110	1-568-463-11	CONNECTOR, D-SUB (SOCKET) 15P			
CN111	*1-565-709-11	HEADDER (STRAIGHT TYPE) 40P			
CN112	1-506-485-11	PIN, CONNECTOR 6P			
CN113	*1-943-604-11	HARNESS (SY-VS)			
CN114	1-506-487-11	PIN, CONNECTOR 8P			
CN115	*1-568-697-11	CONNECTOR, MALE 40P			
CN116	1-540-075-11	SOCKET, IC (SIP MODULE) 30P			
CN301	*1-568-464-11	PIN, CONNECTOR 20P			
CN302	*1-568-465-11	PIN, CONNECTOR 22P			
CN303	1-506-469-11	PIN, CONNECTOR 4P			
		DIODE			
D301	8-719-800-76	DIODE 1SS226			
D302	8-719-800-76	DIODE 1SS226			
D303	8-719-800-76	DIODE 1SS226			
D305	8-713-300-88	DIODE 1T33C-01			
D306	8-713-300-88	DIODE 1T33C-01			
		IC			
DL100	8-759-948-40	IC DS1000M-50			
		FERRITE BEAD			
FB204	1-543-570-11	BEAD, FERRITE (CHIP)			
FB205	1-543-570-11	BEAD, FERRITE (CHIP)			
FB206	1-543-570-11	BEAD, FERRITE (CHIP)			
FB208	1-543-570-11	BEAD, FERRITE (CHIP)			
FB208	1-543-623-11	BEAD, FERRITE (CHIP)			
FB209	1-543-570-11	BEAD, FERRITE (CHIP)			
FB209	1-543-623-11	BEAD, FERRITE (CHIP)			
FB210	1-543-570-11	BEAD, FERRITE (CHIP)			
FB210	1-543-623-11	BEAD, FERRITE (CHIP)			
FB211	1-543-570-11	BEAD, FERRITE (CHIP)			
FB212	1-543-570-11	BEAD, FERRITE (CHIP)			
FB213	1-543-570-11	BEAD, FERRITE (CHIP)			
FB214	1-543-570-11	BEAD, FERRITE (CHIP)			
FB215	1-543-570-11	BEAD, FERRITE (CHIP)			
FB216	1-543-570-11	BEAD, FERRITE (CHIP)			
FB217	1-543-570-11	BEAD, FERRITE (CHIP)			
FB218	1-543-570-11	BEAD, FERRITE (CHIP)			

Ref.No	Part No.	Description	Remark
FB219	1-543-570-11	BEAD, FERRITE (CHIP)	
FB220	1-543-570-11	BEAD, FERRITE (CHIP)	
FB221	1-543-570-11	BEAD, FERRITE (CHIP)	
FB222	1-543-570-11	BEAD, FERRITE (CHIP)	
FB223	1-543-570-11	BEAD, FERRITE (CHIP)	
FB224	1-543-570-11	BEAD, FERRITE (CHIP)	
FB225	1-543-570-11	BEAD, FERRITE (CHIP)	
FB226	1-543-570-11	BEAD, FERRITE (CHIP)	
FB227	1-543-570-11	BEAD, FERRITE (CHIP)	
		IC	
IC001	8-759-993-12	IC 74F373SJ	
IC100	8-759-973-94	IC N80286-10	
IC101	8-759-989-01	IC 74F08SJ	
IC102	8-759-930-35	IC SN74LS125ANS	
IC103	8-759-987-85	IC FE3001	
IC104	8-759-930-35	IC SN74LS125ANS	
IC105	8-759-948-01	IC 74F04SJ	
IC106	8-759-989-03	IC 74F32SJ	
IC107	8-759-987-87	IC FE3010B	
IC108	8-759-930-40	IC SN74LS138NS	
IC109	8-759-987-86	IC FE3021	
IC110	8-759-987-74	IC AM29827ASC	
IC111	8-759-987-92	IC SN74ALS10ANS	
IC112	8-759-922-49	IC SN74LS74ANS	
IC113	8-759-987-77	IC FE3031	
IC114	8-759-744-52	IC 27C512-SY143S3.10E02	
IC115	8-759-744-53	IC 27C512-SY143S3.10002	
IC116	8-759-987-75	IC MB81C4256-10PSZ	
IC117	8-759-987-75	IC MB81C4256-10PSZ	
IC118	8-759-987-75	IC MB81C4256-10PSZ	
IC119	8-759-987-75	IC MB81C4256-10PSZ	
IC120	8-759-929-72	IC MB81256-10PSZ	
IC121	8-759-929-72	IC MB81256-10PSZ	
IC122	8-759-944-61	IC MB81464-10PSZ	
IC123	8-759-944-61	IC MB81464-10PSZ	
IC124	8-759-944-61	IC MB81464-10PSZ	
IC125	8-759-944-61	IC MB81464-10PSZ	
IC126	8-759-929-72	IC MB81256-10PSZ	
IC127	8-759-929-72	IC MB81256-10PSZ	
IC128	8-759-742-79	IC P8742AH-SY143K2.4800	
IC129	8-759-987-84	IC SN7406NS	
IC131	8-759-987-76	IC DS1287	
IC132	8-759-929-99	IC SN74LS32NS	
IC133	8-759-987-55	IC VL16C452-QC	
IC134	8-759-031-68	IC MC1489AM	
IC135	8-759-031-68	IC MC1489AM	
IC136	8-759-031-69	IC MC1488M	
IC137	8-759-987-78	IC WD37C65B	
IC138	8-759-987-80	IC SN74LS245NS	
IC139	8-759-987-80	IC SN74LS245NS	
IC140	8-759-933-65	IC SN74LS244NS	
IC141	8-759-145-78	IC UPD65005GC-306-3B6	

Ref.No	Part No.	Description	Remark
IC142	8-759-930-36	IC SN74LS126ANS	
IC143	8-759-987-92	IC SN74ALS10ANS	
IC144	8-759-929-78	IC SN74LS04NS	
IC201	8-759-944-61	IC MB81464-10PSZ	
IC202	8-759-944-61	IC MB81464-10PSZ	
IC203	8-759-944-61	IC MB81464-10PSZ	
IC204	8-759-944-61	IC MB81464-10PSZ	
IC205	8-759-944-61	IC MB81464-10PSZ	
IC206	8-759-944-61	IC MB81464-10PSZ	
IC207	8-759-944-61	IC MB81464-10PSZ	
IC208	8-759-944-61	IC MB81464-10PSZ	
IC209	8-759-933-65	IC SN74LS244NS	
IC210	8-759-933-65	IC SN74LS244NS	
IC211	8-759-987-80	IC SN74LS245NS	
IC212	8-759-987-80	IC SN74LS245NS	
IC213	8-759-987-79	IC PVGA1A	
IC214	8-759-987-81	IC SN74F241NS	
IC215	8-759-987-81	IC SN74F241NS	
IC217	8-759-987-82	IC 74AC00SJ	
IC218	8-759-982-21	IC RC78L05A	
IC219	8-759-100-94	IC UPC358G2	
IC220	8-752-306-51	IC CX23065A	
IC221	8-759-145-77	IC UPD42102G-3	
IC222	8-759-145-77	IC UPD42102G-3	
IC223	8-759-145-77	IC UPD42102G-3	
IC224	8-759-143-57	IC UPD65006GF-325-3B8	
IC225	8-759-987-83	IC SN74F240NS	
IC226	8-759-930-35	IC SN74LS125ANS	
IC227	8-759-987-80	IC SN74LS245NS	
IC228	8-759-143-59	IC UPD65013S-526	
IC229	8-759-934-11	IC SN74ALS32NS	
IC230	8-759-231-68	IC TMM2018AP-25	
IC231	8-759-231-68	IC TMM2018AP-25	
IC232	8-759-231-68	IC TMM2018AP-25	
IC233	8-759-143-58	IC UPD6902C	
IC234	8-759-143-58	IC UPD6902C	
IC235	8-759-143-58	IC UPD6902C	
IC236	8-759-100-94	IC UPC358G2	
IC240	8-759-945-29	IC TL601CPS	
		IC SOCKET	
ICS100	1-526-962-11	SOCKET, IC (PCC PACKAGE) 68P	
ICS114	*1-526-971-11	SOCKET, IC 28P	
ICS115	*1-526-971-11	SOCKET, IC 28P	
ICS131	1-526-970-11	SOCKET, IC 24P	
		CONNECTOR PIN	
JP201	*1-564-948-11	PIN, CONNECTOR 3P	
JP202	1-564-952-21	PIN, CONNECTOR 6P	
		COIL	
L307	1-459-940-11	COIL, VARIABLE	
L308	1-408-773-31	INDUCTOR CHIP 4.7UH	
L312	1-410-180-51	INDUCTOR CHIP 0.1UH	
L313	1-410-670-31	INDUCTOR 39UH	
		CRYSTAL	
OSC100	1-577-440-11	OSCILLATOR, CRYSTAL (SMALL CMOS)	
OSC101	1-577-442-11	OSCILLATOR, CRYSTAL (SMALL CMOS)	
OSC102	1-577-443-11	OSCILLATOR, CRYSTAL (SMALL CMOS)	
OSC103	1-577-441-11	OSCILLATOR, CRYSTAL (SMALL CMOS)	
		RESISTOR	
R001	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R002	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R003	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R004	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R005	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R017	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R018	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R019	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R020	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R021	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R022	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R023	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R030	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R031	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R032	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R033	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R034	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R035	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R036	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R037	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R038	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R101	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R102	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R103	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R104	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R105	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R106	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R107	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R108	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R109	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R110	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R111	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R112	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R113	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R114	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R115	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R116	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R117	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R118	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R119	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R120	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R123	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R124	1-216-013-00	METAL GLAZE 33 5% 1/10W	

Ref.No	Part No.	Description				Remark
R125	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R126	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R127	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R128	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R129	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R130	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R131	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R132	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R133	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R134	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R135	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R136	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R137	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R138	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R139	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R140	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R141	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R142	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R143	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R144	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R145	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R146	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R147	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R148	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R149	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R150	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R151	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R152	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R153	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R154	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R155	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R156	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R157	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R158	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R159	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R160	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R161	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R162	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R163	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R164	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R165	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R166	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R167	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R168	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R169	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R170	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R171	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R172	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R173	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R174	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R175	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R176	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R177	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R178	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R179	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R180	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R181	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R182	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R183	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R184	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R185	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R186	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R187	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R188	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R189	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R190	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R191	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R192	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R193	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R194	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R195	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R196	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R197	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R198	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R199	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R200	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R201	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R202	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R203	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R204	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R205	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R206	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R207	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R208	1-216-036-00	METAL GLAZE	300	5%	1/10W	
R209	1-216-036-00	METAL GLAZE	300	5%	1/10W	
R210	1-216-036-00	METAL GLAZE	300	5%	1/10W	
R211	1-216-036-00	METAL GLAZE	300	5%	1/10W	
R212	1-216-036-00	METAL GLAZE	300	5%	1/10W	
R213	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R214	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R215	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R216	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R217	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R218	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R219	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R220	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R221	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R222	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R223	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R224	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R225	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R226	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R227	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R228	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R229	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R230	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R231	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R234	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R236	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R240	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R241	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R242	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R247	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R248	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R249	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R250	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R252	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R253	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R254	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R255	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R256	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R257	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R258	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R259	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R260	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R261	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R262	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R263	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R264	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R265	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R266	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R267	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R268	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R269	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R270	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R271	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R272	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R273	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R274	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R275	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R276	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R277	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R278	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R279	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R280	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R281	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R282	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R283	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R284	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R285	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R286	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R287	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R288	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R290	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R291	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R292	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R293	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R295	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R296	1-216-013-00	METAL GLAZE	33	5%	1/10W	

Ref.No	Part No.	Description				Remark
R297	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R298	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R299	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R301	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R302	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R303	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R304	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R305	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R306	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R307	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R308	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R309	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R310	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R311	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R312	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R313	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R314	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R315	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R316	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R317	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R318	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R327	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R328	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R329	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R330	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R331	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R332	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R333	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R334	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R335	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R336	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R337	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R338	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R339	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R340	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R341	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R342	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R343	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R344	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R345	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R346	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R347	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R348	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R349	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R350	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R351	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R352	1-218-356-91	METAL GLAZE	75	1%	1/10W	
R353	1-218-357-91	METAL GLAZE	200	1%	1/10W	
R354	1-218-356-91	METAL GLAZE	75	1%	1/10W	
R355	1-218-357-91	METAL GLAZE	200	1%	1/10W	
R356	1-218-356-91	METAL GLAZE	75	1%	1/10W	
R357	1-218-357-91	METAL GLAZE	200	1%	1/10W	
R358	1-218-167-11	METAL GLAZE	330K	1%	1/10W	

Ref.No	Part No.	Description				Remark
R359	1-218-166-11	METAL GLAZE	300K	1%	1/10W	
R360	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R365	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R366	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R367	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R368	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R369	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R370	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R371	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R372	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R373	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R374	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R375	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R378	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R379	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R380	1-216-326-11	METAL GLAZE	1.8K	1%	1/10W	
R381	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R382	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R383	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R384	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R385	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R386	1-249-403-11	CARBON	68	5%	1/4W	
R390	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R391	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R392	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R393	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R394	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R395	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R396	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R397	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R398	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R399	1-216-013-00	METAL GLAZE	33	5%	1/10W	
		NETWORK RESISTOR				
RB001	1-236-596-11	RES, NETWORK (MIATURE FLAT TYPE)				
RB002	1-236-596-11	RES, NETWORK (MIATURE FLAT TYPE)				
		SWITCH				
SW301	1-553-510-00	SWITCH, SLIDE				
		THERMISTOR				
TH301	1-202-850-00	THERMISTOR (POSITIVE)				
TH302	1-202-850-00	THERMISTOR (POSITIVE)				
		CRYSTAL				
X100	1-567-881-11	VIBRATOR, CRYSTAL				
X201	1-577-575-11	OSCILLATOR, CRYSTAL				
X202	1-577-436-11	OSCILLATOR, CRYSTAL				
X203	1-577-437-11	OSCILLATOR, CRYSTAL				

****

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
	1-544-265-11	SPEAKER	
	1-574-817-11	WIRE ASSY, FLAT SLIT (40 CORE)	
	*1-943-606-11	HARNESS (VS-SP)	

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
.1-556-760-11	CORD, POWER (3 CORE)	
*3-698-410-01	SHEET, PROTECTION	
3-751-199-11	MANUAL, INSTRUCTION	
3-751-200-11	MANUAL, INSTRUCTION, FITTING	
*4-615-847-01	CUSHION (UPPER)	
*4-615-848-01	CUSHION (LOWER)	
*4-615-875-01	INDIVIDUAL CARTON	

****

HARDWARE LIST
****

7-628-254-20	+PSW, 2.6X8	
	SCREW	
7-682-647-09	SCREW +PS 3X6	
7-682-647-09	SCREW +PSW 3X6	
7-682-648-09	SCREW +PSW 3X8	
7-682-661-09	SCREW +PSW 4X8	
7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
7-682-547-04	SCREW +BVTT 3X6 (S)	

****

CHAPTER 10
EXPLANATION OF SMI-5050

10-1. OPERATION

10-1-1. Features

The SMI-5050 is a 2M-byte expansion memory for the Sony VIW-5600D VIEW System, capable of increasing the system memory to 2.6M bytes. It consists of two 1M-byte modules which can easily be installed in the VIW-5600D mother (SY-143) board.

The SMI-5050 features :

- 2M-byte RAM (with parity), 100n sec. access time
- Conforms to the LIM (Lotus/Intel/Microsoft) EMS 4.0 standard and can be used as an expanded memory
- Can also be as used as an extended memory, allowing the user to configure a RAM disk (virtual disk)

Notes

- After installing (or removing) the SMI-5050, set (reset) the VIW-5600D's SETUP RAM using the installation program provided in the SMW-5001 VIEW/VGA Operating System Package. For more information including use of the EMS device driver (MM.SYS) and RAM disk driver (RAMDRIVE.SYS), refer to the SMW-5001 manual.
- When used as an expansion memory, the SMI-5050 cannot coexist with a commercially available expansion memory board for the IBM PC/AT.

10-1-2. Installation

10-1-2-1. Precautions

- Before installation, turn off the power to the system and remove the power cable from the wall outlet.
- The module comes packed in an anti-electrostatic protective bag. Avoid touching the RAM chips on the module when removing it from the package or installing it to the system.
- The module is a delicate high-precision component. Do not drop or bump it against other objects.

10-1-2-2. Removing

1. Remove the cover assembly.
   Refer to Chapter 2-1-1.

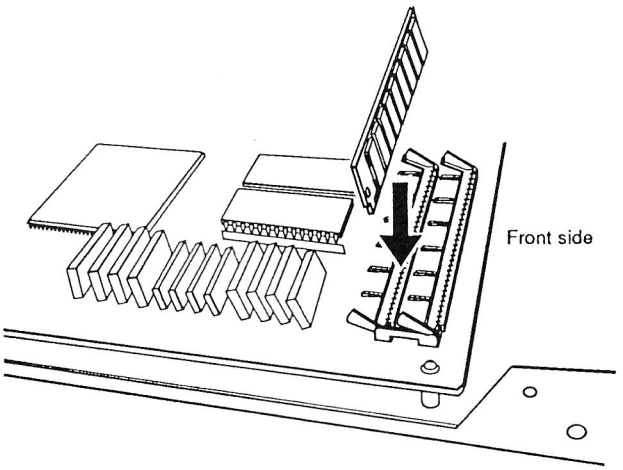
2. Remove the videodisc player part.
   Refer to Chapter 2-1-2.

3. Remove the shielding sheet.
   Refer to Chapter 2-1-3.

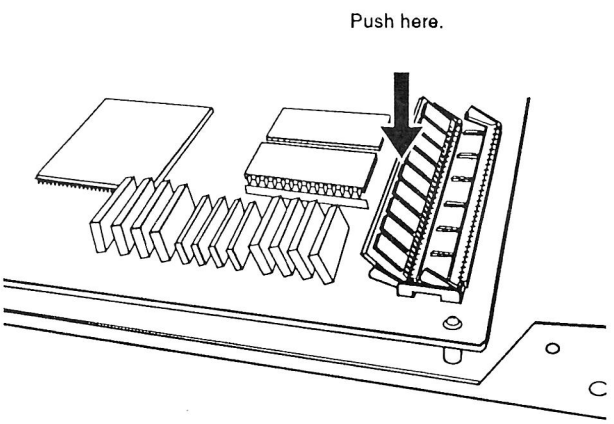
10-1-2-3. Mounting

The memory module sockets are located in the left side corner (looking at the system from the front of the SY-143 board.

1. Insert one module in the socket (CN116-1/2).
   The module's metal contact side must go in first.



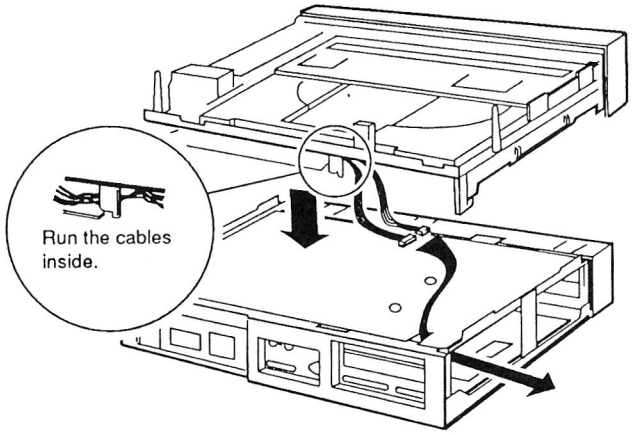
2. Lightly push the top of the module down until it snaps into the socket.



3. Insert the second module in the remaining socket (CN116-2/2).

10-1-2-4. Reinstalling

Follow the instructions provided in Section 10-1-2-2 "Removing" in reverse order.
Be sure to pass the data cables inside the unit.



Tips

When placing the videodisc player part in position, shift it slightly forward and then pull it backward on the computer part. This will make the operation easier.

Notes

- Be sure to connect the internal cable before reinstalling the cover assembly.
- Be aware of internal wiring when placing the videodisc player part in position. Take a moment to check that no wires are squeezed under the unit.

10-1-3. Specifications

Memory RAM	2M bytes
Access time	100n sec.
Power requirement	+5V DC ±10%
Current consumption	60 mA typ.
Operating conditions	
Temperature :	+5 to +35℃ (+41 to +95°F)
Humidity :	25 to 80% (at +25℃ or +77°F)
Storage conditions	
Temperature :	−20 to +60℃ (−4 to +140°F)
Dimensions	Approx. 89 × 5 × 20.5 mm (w/h/d)
	$\left(3\frac{5}{8}\times\frac{7}{32}\times\frac{13}{16}\text{ inches}\right)$
Weight	13 g (0.46 oz.)

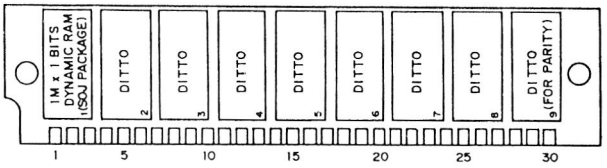
10-2. SERVICE INFORMATION

The SMI-5050 consists of two D-RAM modules [MB85235-10 (FUJITSU) or MH1M09A0J-10 (MITSUBISHI)].
In case of malfunctions, replace with a commercially available equivalent module.

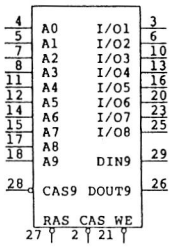
10-3. MODULE BLOCK DIAGRAM

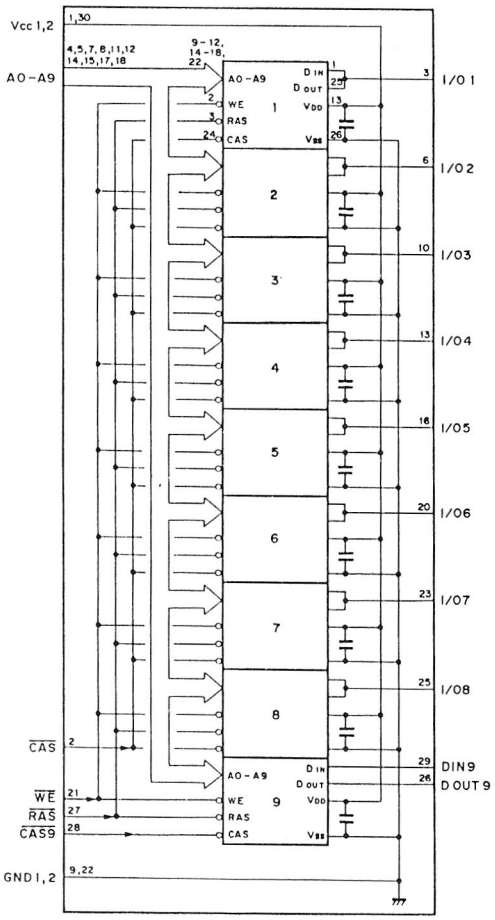
MB85235-10 (FUJITSU) (ACCESS TIME = 100nS)
MH1M09A0J-10 (MITSUBISHI) (ACCESS TIME = 100nS)

C-MOS 1,048,576x9 BITS DYNAMIC RAM MODULE
– MOUNTED VIEW –



PIN	SYMBOL	DESCRIPTION
1	VCC1	+5V SUPPLY
2	$\overline{CAS}$	COLUMN ADDRESS STROBE INPUT
3	I/O1	DATA 1 INPUT/OUTPUT
4	A0	ADDRESS 0 INPUT
5	A1	ADDRESS 1 INPUT
6	I/O2	DATA 2 INPUT/OUTPUT
7	A2	ADDRESS 2 INPUT
8	A3	ADDRESS 3 INPUT
9	GND1	GROUND
10	I/O3	DATA 3 INPUT/OUTPUT
11	A4	ADDRESS 4 INPUT
12	A5	ADDRESS 5 INPUT
13	I/O4	DATA 4 INPUT/OUTPUT
14	A6	ADDRESS 6 INPUT
15	A7	ADDRESS 7 INPUT
16	I/O5	DATA 5 INPUT/OUTPUT
17	A8	ADDRESS 8 INPUT
18	A9	ADDRESS 9 INPUT
19	NC	NO CONNECTION
20	I/O6	DATA 6 INPUT/OUTPUT
21	$\overline{WE}$	WRITE ENABLE INPUT
22	GND2	GROUND
23	I/O7	DATA 7 INPUT/OUTPUT
24	NC	NO CONNECTION
25	I/O8	DATA 8 INPUT/OUTPUT
26	DOUT9	DATA 9 OUTPUT
27	$\overline{RAS}$	ROW ADDRESS STROBE INPUT
28	$\overline{CAS9}$	COLUMN ADDRESS STROBE INPUT
29	DIN9	DATA 9 INPUT
30	VCC2	+5V SUPPLY





VIW-5600D (EK)
9-972-873-11

Sony Corporation
Home Video Group

English
90A0508-1
Printed in Japan
© 1990. 1

Published by Customer Relations and Service Group